MAR 19 1948

Textile Industries

MARCH, 1948

formerly COTTON *Textile Industries*

PER SERIAL

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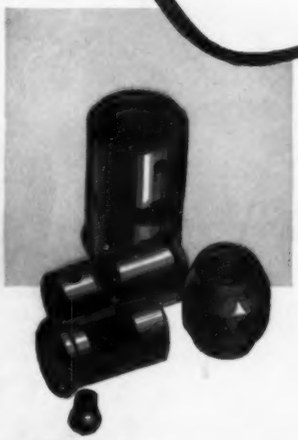
MAR 22 1948 SERIALS DIVISION

SLEEVE TYPE BEARINGS *for the* Textile Industry

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS



• Textile Mill owners and operators find Johnson Bronze Sleeve Bearings are an exceptionally good investment. The uniform, high quality of every Johnson Bronze product guarantees the utmost in performance, quiet operation and long bearing life.

To manufacturers of new equipment we offer a thoroughly competent bearing counselor service. We help you select the right bearing for each application. The one that will deliver the greatest service for the longest possible time at the lowest cost.

For replacement we offer the most complete line on the market. Over 850 stock sizes of plain cast bronze bearings . . . 250 individual types of Electric Motor Bearings . . . 350 sizes of UNIVERSAL bronze bars enables you to buy exactly according to your needs. The next time you need Sleeve Bearings . . . call on Johnson Bronze.

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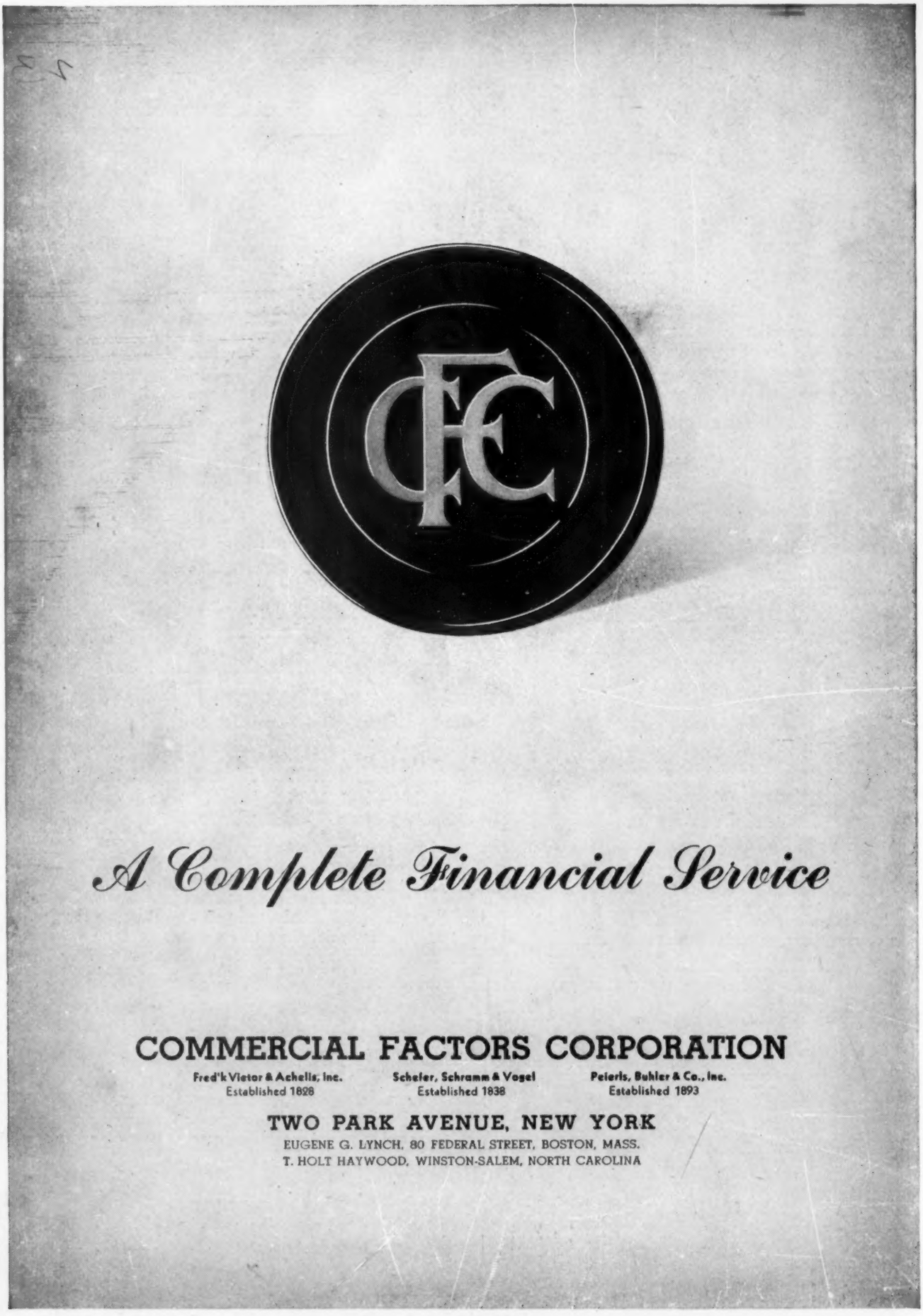

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Volume 112 Number 3

Proven By

D

Anti friction bearing treadle rolls have proven themselves. Rolls shown above ran 37,500 hours. New Departure Engineers estimate they would run another 20,000. Think of it. 57,500 hours!

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High carbon, heat treated chrome steel enables roll surface to withstand severe shock and wear.

Double felt, labyrinth seals keep dirt and lint out, while preventing leakage of permanent lubricant. No internal greasing or oiling necessary.

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Round pins permit roll to seat itself in treadle pocket. This combination will not lock, eliminating danger of flash fire.

Cut maintenance costs now. Buy Anti friction bearing treadle rolls for all your looms. We can make immediate delivery.

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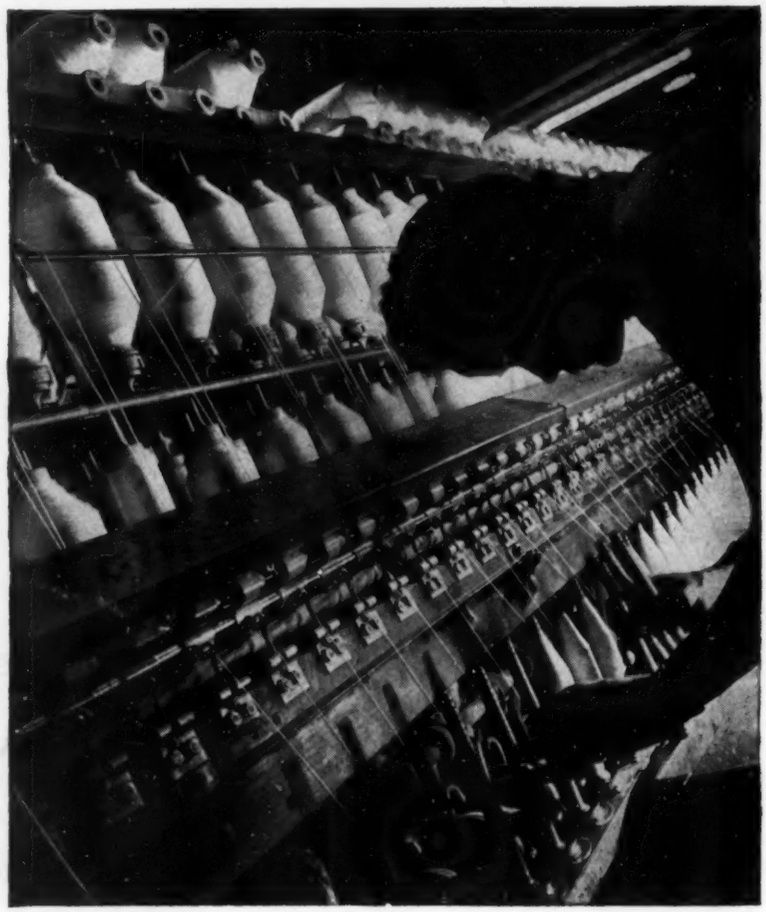

INCREASE PRODUCTION . . . IMPROVE QUALITY

Texaco Spindura Oils resist oxidation, thickening, fogging

When you lubricate spindles with *Texaco Spindura Oils* your yarn will come through cleaner, smoother, more uniform in twist. That's because *Spindura Oils* assure less spindle vibration, less hunting and lagging, less fogging, fewer ends down.

These *Spindura* advantages also enable frames to operate efficiently at higher speeds while carrying heavier, firmer packages . . . assurance of increased production of improved quality yarn.

Texaco Spindura Oils meet all spindle manufacturers' specifications for lubrication of spinning, throwing, spooling and twisting machines. Famous mills everywhere use them.

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FOR THE TEXTILE INDUSTRY

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Volume 112, Number 3

ABC

Textile Industries

MARCH, 1948

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"Textile Industries" has the largest circulation among the mills of the United States of any textile publication.

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Business Manager

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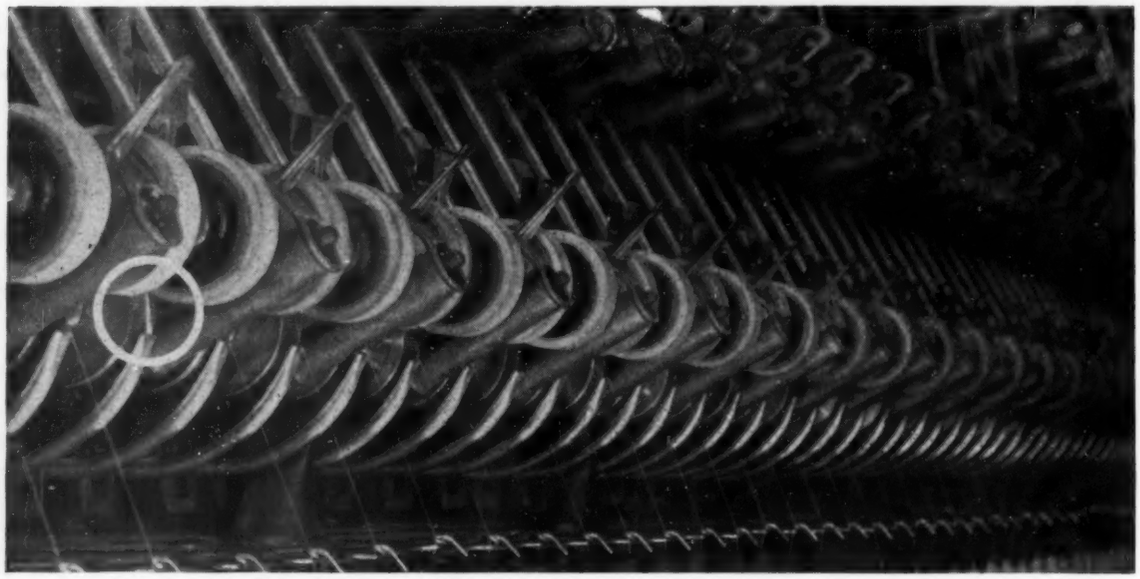
PNEUMAFIL* ..for Wool and Worsted Spinning

· Increases Production · Improves Quality · Lowers Costs



Pneumafil, operating as a vacuum system, removes free lint and foreign matter from the yarn as it leaves the front rolls. Immediately breakage occurs, the broken end is picked up and pneumatically conveyed to the collector unit. Here the waste is retained in the form of open use material ready for reuse without waste machine processing.

Many of the problems heretofore accepted as inherent to wool and worsted spinning are thus eliminated. Spinners are relieved of ends down troubles. There are less ends down and less time required to put up ends. Scavenger rolls are eliminated. Spinning room waste and cleaning are reduced. Housekeeping is benefited.

Stoppages to straighten out "ball up" sides or remove waste are eliminated, also, spinning doublings and "wild" or "flying" ends. Roving waste is salvaged with little reduction in original quality and may be reused, not as ordinary waste, but as "new" material. Frequently, it is practicable to operate at higher spinning speeds when equipped with Pneumafil.

Realize these benefits by equipping your frames with Pneumafil. The overall results will be *increased production, improved yarn quality, greater spinning efficiency* and *lower manufacturing costs.*

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throw away that crystal ball

Despite the uncertainties of the next few years, one fact is admitted in the textile industry. Profits must come from savings; further markups are dangerous. And no textile man needs a crystal ball to see how to effect these savings. In winders particularly, the means are evident. *Greater production* of a *better product* at *less cost* can be more or less achieved by any modern winder. But that alone is not enough. Winding equipment must also be **FLEXIBLE,**—adaptable to changing fibre and yarn requirements, for change is the order of the day. The Foster Model 102 is the ONLY winder of its type which offers maximum flexibility in addition to the other modern requirements.

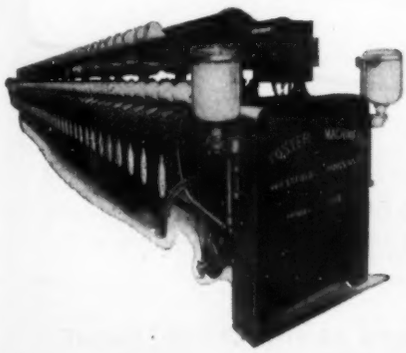
HERE'S THE STORY:—

FLEXIBILITY – Will handle any count or type staple yarn with same traverse mechanism—any angle of wind from 9° to 18° —any ordinary taper. Can be equipped to wind knitting cones, warper cones, dye packages, tubes or short traverse cheeses, one type on each side of the machine if desired.

INCREASED PRODUCTION – Doubles production over obsolete models because of high winding speeds (up to 700 y.p.m.) and labor saving devices mentioned under "ECONOMY". 7" traverse packages instead of standard 6", if desired.

ECONOMY – Reduces operating costs ⅓ under obsolete models because of self threading tension devices, easy doffing, 7" traverse package, if desired, and empty bobbin conveyors which empty into standard sized trucks. Repair costs as low as $3.50 per year per 100 spindle machine.

QUALITY PRODUCT – Automatic inspection. Conditioned yarn. Convex base prevents underwinding and nipping. Ribbon breaker prevents ribbon wind. Uniform density and properly shaped cones. Minimum tension on soft twist yarns prevents excessive breakage.



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Westfield, Mass., U.S.A.

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FOSTER MODEL 102

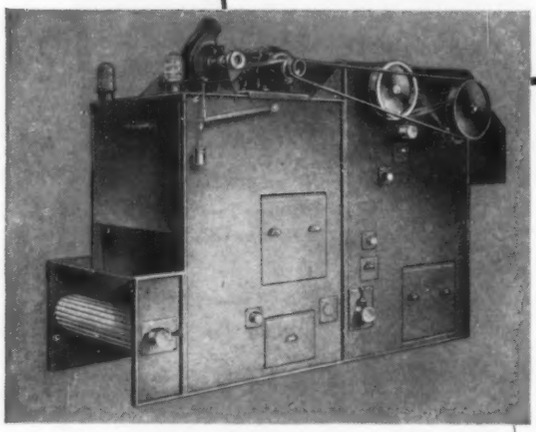
The Flexible Winder

FOR COTTON, MERCERIZED, WOOL, WORSTED, MERINO, SPUN SILK OR SPUN RAYON YARNS

remove DUST and DIRT as soon as possible

The most logical place at which to remove dust and dirt is in the Opening Room. Here the fibers are in a loose condition so that the impurities canbe removed without danger of fiber breakage.

The Saco-Lowell line of modern Opening Equipment consists of four units, each with a distinct purpose . . .



The F-7 Cleaning and Blending Feeder

The #12 Lattice Opener

1. Blending feeders to take full advantage of the gentle opening action of the feeder aprons.

2. The Vertical Opener which combines the cleaning and blooming action of swirling air currents with the effective trash removal obtained through the medium of beaters and grid bars. The lighter impurities settle in an air space outside the grids.

3. The #12 Lattice Opener, preferably in tandem, with its horizontal beater which effects a combing action to the fringe of stock so that pepper leaf, seed particles, and other light bits of foreign matter are removed.

4. The #11 Dust and Waste Extractor provides strong air currents to carry away the lightest types of trash, dust, and pepperleaf.

We earnestly recommend the use of our Recirculating Air Filters in the Opening Line. The recirculation of air makes possible the closer and more economical control of the conditions of temperature and humidity in the room. The returned air is clean and free of dust particles.

If you are troubled with dirt or specks in your yarn, a survey by our engineers may develop means to improve your product.

Saco-Lowell Shops • SHOPS AT BIDDEFORD, MAINE

BOSTON, MASSACHUSETTS • BRANCHES: CHARLOTTE, GREENVILLE, ATLANTA

AHCOVELS for the Soft Touch

NOW MORE THAN EVER

AHCOVELS* have always brought good draping qualities and a smooth, flexible hand to cotton, rayon, wool, silk, actetates, nylon and other fabrics. It's the soft touch.

Now, Arnold Hoffman & Company has improved these matchless softeners so that they are better than ever.

AHCOVELS are now almost pure white in color, more resistant to yellowing, and more stable when subjected to heat.

Here is real news! The best substantive softeners on the market are improved and there is no increase in cost to you. Truly, finishing with AHCOVELS is a soft touch.

Sample and further data on request.

* Trademark Reg.

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ESTABLISHED 1815 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.

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So the heads *won't twist off...*

UNBRAKO

Reg. U. S. Pat. Off.

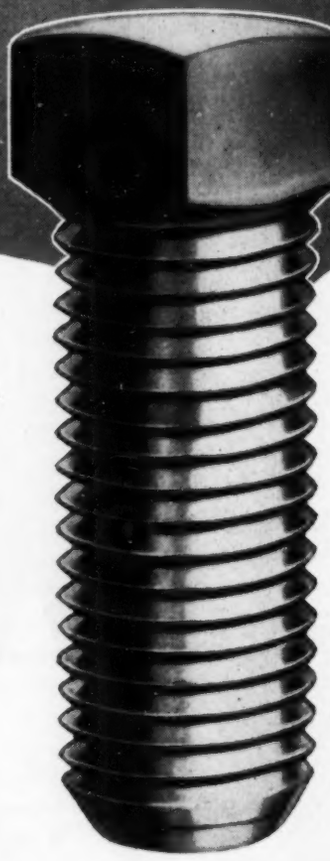


Fig. 1507-B

SQUARE HEAD SET SCREWS

Made of a special alloy steel, the "UNBRAKO" Square Head Set Screw is a "brute" for strength — it's practically impossible to twist its head off, — thus, helping to reduce the cost of maintenance materially . . . because, if and when an "old style" square head set screw does twist off, just to get it out costs many times the prices of the screw these days . . . especially if it's in an awkward place! Ask for *your* copy of the "Unbrako" Catalog of Screw Products.

See us at Booths 324, 326 and 328 — A.S.T.E. Exposition — March 15th to 19th in Cleveland.

"Unbrako" and "Hallowell" Products are sold entirely through Industrial Distributors.

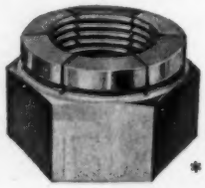
"UNBRAKO" SOCKET SET SCREW WITH KNURLED CUP POINT

The knurled Cup Point of the "Unbrako" Socket Set Screw makes it a Self-Locker — the point digs in and holds fast, even when subjected to the most chattering vibration.

"UNBRAKO" SOCKET SET SCREW WITH KNURLED THREADS

The knurled threads of this "Unbrako" Socket Set Screw makes it a Self-Locker, too, for use where the point does not lend itself to knurling. Knurling of Socket Screws originated with "UNBRAKO" in 1934.

"FLEXLOC" SELF-LOCKING NUTS



The All-Metal, One-Piece "Flexloc" is a Self-Locking Nut that won't budge, regardless of vibration, except when a wrench is used. It can be used over and over without losing much of its torque and being a "stop" nut it will stay locked in any position on a threaded member — "a real fastener," if ever there was one. Let a few free samples convince you

"HALLOWELL" KEY KIT

You can't tighten or loosen socket screws without a hex socket wrench, so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits. We are prepared to furnish "Unbrako" Socket Screw Products in Stainless Steel

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OVER 45 YEARS IN BUSINESS

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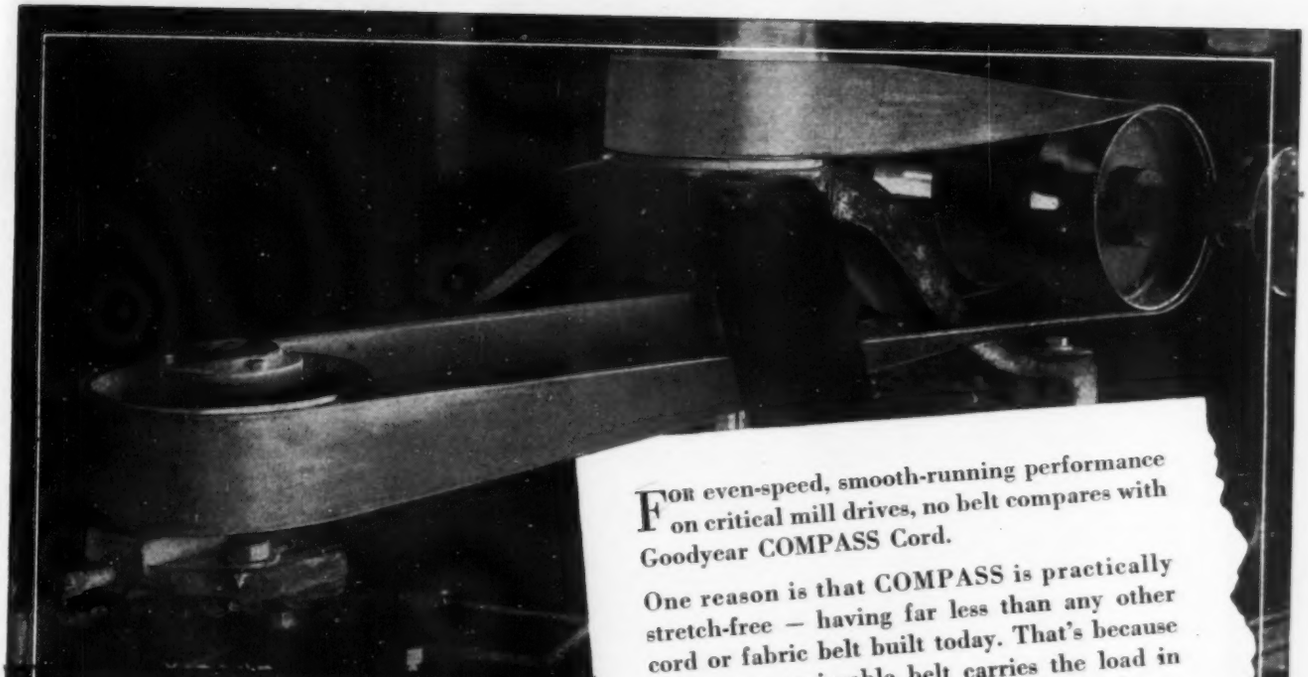
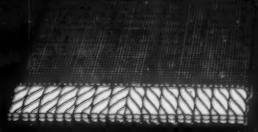


It THRIVES on tough DRIVES!

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GT-Specified COMPASS CORD ENDLESS BELT

For Heavy-Duty Mill Drives



Note that the load-carrying cords on one side of the belt are right-hand twist — on the other side, left-hand twist. This patented Compass construction insures a balanced, true-running belt that will not "travel" on the pulleys.

FOR even-speed, smooth-running performance on critical mill drives, no belt compares with Goodyear COMPASS Cord.

One reason is that COMPASS is practically stretch-free — having far less than any other cord or fabric belt built today. That's because this super-serviceable belt carries the load in a layer of heavy-duty rope cords, spiraled continuously without a splice.

This unique, endless construction affords much greater strength and stamina. Result: COMPASS Belts are 25% thinner than other belts of the same power rating — assuring far longer flex life.

So on slubbers, spoolers, vertical openers, wherever belts find tough going, you can depend on COMPASS to do the job with unbeatable efficiency. The fact is, COMPASS will often deliver from two to more than four times the service of conventional belts — and the experience of countless mills proves it.

If you'd like that kind of belt performance on your hard drives, why not get the full story on COMPASS? Just consult the G.T.M. — Goodyear Technical Man — or write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

FOR HOSE, BELTING, MOLDED GOODS, PACKING — built to the world's highest quality standard, phone your nearest Goodyear Industrial Rubber Products Distributor.

Compass—T.M. The Goodyear T. & R. Co.

GOODYEAR

THE GREATEST NAME IN RUBBER

FOR YOUR INFORMATION

8+3=RESLOOM

PERFORMANCE QUALITIES + EXCLUSIVE PLANT ADVANTAGES

Millmen and finishers as well as the manufacturer and ultimate consumer profit by the use of Resloom in finishes for cotton, wool and rayons. Unlike other materials, Resloom offers:

Stability in storage . . . Resloom can be stored at room temperatures for an indefinite period.

Ease of putting into solution . . . no boiling or icing is required with Resloom and solutions have outstanding stability.

Less Resloom required than other finish materials to achieve a given quality.

These three exclusive Resloom features mean production speed-up and a reduction of application costs. These economical advantages are in addition to the following eight sales assets Resloom gives your fabric:

1. **Wrinkle Resistance** . . . unexcelled . . . angle of recovery 100% or more (3 measured on Monsanto Wrinkle Recovery Meter.
2. **Durability** . . . Resloom doesn't wear away, wash away, dry steam away . . . as durable as the fiber itself.
3. **Shrinkage Control** . . . Often as low as 1% when tested by CCC-T-191a standards.
4. **Stability** . . . a unique fabric builder, upgrades your constructions.
5. **Versatility** . . . effective on all fibers, unequalled on blends.
6. **Compatibility** . . . can be used with other finishing agents.
7. **Strength** . . . no deterioration of fibers.
8. **"Hand"** . . . crisp or soft, any "hand" to meet your preference . . . a range of Resloons makes this possible.

For more Resloom data check C1 on the coupon opposite. C1

PRICE REDUCTION FOR MONSANTO'S SYNTHETIC DETERGENT

Increased use of Sted, Monsanto's universal textile detergent and scouring agent has made possible a further reduction in prices.

This reduction warrants an immediate comparison of Sted with any soap or detergent for use in scouring, cleaning or degreasing.

Effective on all types of fibers, Sted has demonstrated its cleansing power in raw wool scouring, kier boiling, desizing, backwashing, hosiery scouring and other washing operations.

Monsanto's all-purpose detergent is stable under all conditions—acid, alkali, hot, cold, hard or soft water.

On a pound for pound basis, Sted has proved to be more effective than other detergents for washing prints, scouring whites, degreasing wool and general cleaning.

For complete technical information on Sted, check C2 on the coupon.

STED'S LOW PRICES

The following new prices for Sted apply on 100 lb. bags LCL:

F.O.B. Anniston, Ala.	12½c per lb.
F.O.B. Camden, N. J.	13¾c per lb.
F.O.B. Everett, Mass.	14c per lb.

Carload prices from each of these shipping points will be ½¢ a lb. less.

STYMER SAVES ONE HOUR IN DESIZING OPERATION

Mill experience has disclosed that one important advantage of Stymer, Monsanto's new synthetic sizing agent for slashing acetate warps, is the ease with which it is removed from the woven fabric before dyeing and finishing.

A typical report: "Stymer is washed out in 30 minutes; other sizing materials require 1½ hours or more." Stymer is completely removed by a mild scour. No enzymes or strong scouring agents are necessary.

Further proven advantages for Stymer are:

1. Exceptional strength, uniformity and flexibility of the sized warp.
2. Efficiency in slashing—Does not stick to dry cans, separates easily at the lease rods and does not gel in the pipes or size box.
3. Improvements in weaving—reduces shedding, eliminates static, maintains yarn twist and produces more uniform fabric.

Reg. U. S. Pat. Off. Resloom, Stymer, Merlon

For more Stymer information, encircle C4 in the coupon.

TYPICAL STYMER MILL CASE HISTORY

WARP DATA	
Fiber	Acetate
Denier	75
Filament	20
Twist	S
Slay	104
Ends	4160
Picks	76
Quality	Bright

SIZE MIX	
Strength	5%
Viscosity	75 cps.
Temperature	150°F.
Formula	42 lbs. Sodium Stymer 1.5 lbs. Defoamer

Remarks: Sodium Stymer added to hot water with vigorous agitation—boiled for 15 minutes. Clear, uniform solution. No difficulty in preparation.

SLASHING DATA	
Type	Johnson 7 can
Speed	50 yds. per min.

SLASHING DATA (Con't.)	
Pickup	app. 70%
Roll Covering	Rubber
Can Temperatures	No. 1. 160°F No. 2. 180°F No. 3. 200°F No. 4. 210°F No. 5. 210°F No. 6. 200°F No. 7. 150°F
Can Coverings	None
Stretch	3%
Appearance	Uniform well sized yarn
Solids Deposited	app. 3.5%

Remarks: Slashing performance was excellent—warps characterized by flexibility and smoothness of handle.

WEAVING DATA	
Speed	150 ppm.
Shedding	None
Weaving Efficiency	98%

Remarks: Stymer sized warps wove most satisfactorily. Weaving results superior to standards previously obtained for this construction.

MERLONS, MONSANTO'S RESIN DISPERSIONS AVAILABLE FOR IMPROVEMENT OF TEXTILES

Nine Merlons, members of a family of resin dispersed resins, now make possible a wide range of durable finishes for all textile fibers and fabrics.

Varying degrees of softness, fullness and flexibility are obtained by selection or blending of the proper Merlons.

Specific fabric improvements imparted by the Merlons include:

1. Increased wear for work clothes.
2. Luster to sheetings and shirtings.
3. Fullness and crispness to dress goods.
4. Washability and stiffness to curtain materials.

These clear, colorless and odorless resins also have been used successfully as binding agents for pigments, backfilling and fiber bonding.

They are applied from a dilute aqueous bath and require no curing or other after treatment. No special equipment is necessary for application. Once applied, the resin is fixed by merely driving off the moisture by regular drying.

The Merlons are non-irritating, have no affinity for chlorine and are stable over a fairly wide pH range.

For complete details on the Merlons, use the coupon below, marking C3. We can be more helpful if you will state your special interest and type of material.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY...WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DEPT.
Desk TIT3, 140 Federal Street, Boston 10, Mass.

Please send me the following material:

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

ATTENTION PLEASE!

The International Exposition of Textile Machinery, Equipment, and Supplies . . . to be held in the 71st Regiment Armory, 34 St. and Park Ave., N. Y., May 3-7, 1948 . . . will be attended by mill owners, overseers, superintendents, and purchasing agents representing all fibers and from every textile producing center in America and from all parts of the world. If you're making a product of interest to this audience, show it at this trade exposition.

If you're interested in attending, write for as many invitations as you desire.

For full information regarding this exposition, write: Executive Offices, Suite 205, 36 West 47th Street, New York 19, N. Y., or Phone WAtkins 9-8068-9-70.

PICKER REPAIR PARTS
For IMMEDIATE DELIVERY

We manufacture and keep on hand for immediate delivery a complete stock of repair parts for Kitson pickers. We can also furnish many parts, such as screens, ball bearings, aprons, and beaters, for other pickers.

In an emergency, a telephone call or telegram can have the needed repair parts at your plant the day after the order is placed.

Aldrich rebuilt pickers are exactly like new machines, and where it is not feasible to have your own pickers rebuilt, these can be exchanged for similar sections in our warehouse which can be rebuilt for you and installed with little or no interruption to production.

AldricH MachinE
Greenwood **WorkS** South Carolina

NEW Roll Covering

Specially designed for running synthetic and natural fibers, the new red Dayco Type "SE" Roll Covering processes synthetics with greater uniformity, with less lapping up and practically no ends down. Not affected by heat or humidity, The Dayco Type "SE" Roll Covering will give the same uniform service throughout its extremely long life. Remember, whether you're running cotton, wool or synthetics there's a mill-proved Dayco especially engineered for your frames. For complete information write Dayton Rubber, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Bldg., Greenville, South Carolina.*

DAYCO ROLL COVERINGS are available for drawing all types of fibers

Whether your frames are equipped with flat or revolving clearers, there is a specially engineered Dayco for maximum results.

TYPE "C" for revolving clearers. Precise, accurate accounting records show the cost per hour of operation is less—with Daycos.

TYPE "S" especially designed for flat clearers, where eyebrowing is a problem. Spinning room overseers, everywhere, acclaim Daycos' ability to draft uniform yarn.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Each pin in the map represents a mill where patented Hunt Spreaders are in use. More than 200 such installations have been made—often as many as 1000 units in one mill.

Hunt SPREADERS
• ADD YEARS TO LOOM LIFE •

Recognition of Greater Loom Efficiency Through Spreader Installation Is Industry-Wide

Installations of Hunt Spreaders have proved, in many of the industry's leading mills, that addition of Spreaders to looms, together with modernization, has effected startling increases in production—sometimes as much as *18% greater than when the looms were new.*

To supply the tremendous demand thus created for patented Hunt Spreaders, the plant and personnel at Hunt Machine Works have been expanded more than 1000 percent in the past few years.

The Hunt Spreader is no "Johnny-come-lately". For more than five years now, the Spreader principle has been tested and proven. Installation on looms provides stability, adds needed bearings to crankshaft and camshaft, and reduces destructive vibration. Increased speed is made possible. Maintenance costs are lowered.

The patented Hunt Spreader is, in cloth production, a *Proven Factor.*

Write for illustrated literature showing Hunt Spreaders in use.

HUNT MACHINE WORKS, INC.

SUCCESSORS TO

MOUNTAIN CITY FOUNDRY AND MACHINE CO. AND HUNT LOOM CO.

200 ACADEMY STREET TELEPHONE 200 GREENVILLE, SOUTH CAROLINA

90% OF ALL V-BELT DRIVE PROBLEMS SOLVED ECONOMICALLY WITH TEXROPE

Pre-Engineered Drives

TEXROPE .. Greatest Name in V-Belt Drives

This New Manual Lists them for Quick Reference
You find number, size and length of belts, diameters of sheaves, power, speed, center distances in one place.
Edge index and classified index make this manual, fast, easy to use. It's a complete V-belt drive reference work.
Complete V-belt drive engineering data tables are included in manual, for figuring special drives.
Stock Texrope Drives

"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip"
— sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.

SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.

ENGINEERING
Finest V-Belt engineering talent in the world—at your call.

TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

USING STOCK BELTS AND SHEAVES, Texrope engineers have selected the *best* drive for each requirement . . . the drive most economical in first cost and in maintenance.

Only Allis-Chalmers offers you this complete Pre-Engineered drive manual. It is the product of 23 years of industrial V-belt drive experience, the finest engineering talent in the business.

Here is a book that will save you time and money in the purchase of V-belt drive equipment. Copies have been sent to many Texrope users and dealers. If you don't have a copy yet, write for Texbook No. 20P40. ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2335

Texrope, Super-7, Texsteel, Texdrive, Magic-Grip and Vari-Pitch are Allis-Chalmers Trademarks

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

1847 1947 A CENTURY OF SERVICE to Industry THAT MADE America Great

SANDOZ PRESENTS *The color achievement of the month*

Cover Girl Colors BY BARBOUR

Bright and *saucy* are the adjectives you'd use to describe the colors selected by Barbour Mills for these two fleece coats tailored by "Kitten's Ear" and modelled by two teen-age cover girls at famous Wayside Inn.

For these coats Barbour wants colors that will sell . . . will hold up in service . . . and can be handled efficiently and economically in the dyeing process. That is why Barbour—like so many other textile leaders—insists upon the quality that Sandoz represents.

Among the Sandoz color achievements is:

ALIZARINE LIGHT BLUE 5GL (Pat.) a new and outstanding clear, greenish acid blue with similar properties to those of its predecessor, Alizarine Light Blue 4GL—for years the standard for fastness-to-light and level dyeing in acid blues. It provides unsurpassed fastness in peacock, teal and turquoise shades and—with Xylene Light Yellow 2G—faster greens.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. • Other branches at Providence, Paterson, Chicago.

SAND *thinks ahead with textiles* S SANDOZ

THIS IS NO. 68 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

EMULSION ATTACHMENT
For Roto-Coner*

Uniform moistening of the cotton yarn is achieved on the Roto-Coner* by means of an attachment which rotates the emulsion rolls at constant predetermined speeds.

The power to operate the rolls is taken from the cam shaft which has an approximate speed of 40 rpm, and is reduced by gears to two sets of driving sprockets (A in Fig. 2), one for each side of the machine.

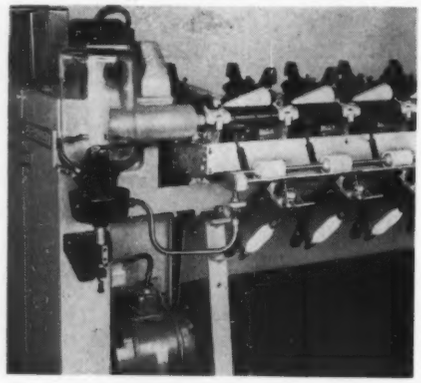


Fig. 1 Roto-Coner Emulsion Attachment, showing bottle mounted at head end, trough and rolls.*

These driving sprockets are connected by chain to sprockets (B) on the emulsion roll shafts.

There are three driving sprockets and three driven sprockets for each side of the machine. The ratios between driving and driven sprockets are 1–1, 5–3, 3–1. Since the gearing

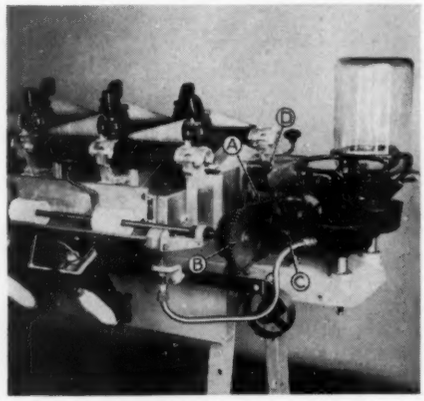


Fig. 2 Driving arrangement for Emulsion Attachment at remote end of machine (with gear housing removed). Note sturdy construction.

gives a driving sprocket speed of 9 rpm, the speed of the emulsion rolls can be 9, 5.4 or 3 rpm. The chains are easily changed from sprocket to sprocket as they are run rather slack and are provided with idler pulleys. (This arrangement also simplifies levelling and alignment of troughs and rolls.)

An arrangement of twin meshing gears—one on each driving sprocket shaft—provides a choice of emulsion roll rotation — with or against the yarn. The shafts on which the driving sprockets are mounted are arms of a "reversing lever", and this can be swung, after loosening a screw (C) from one side to another to allow either of the two gears to mesh with the cam shaft pinion (D). If the gear at the right of the reversing lever (when facing the drive head) is in mesh with the pinion, the rolls will turn with the yarn; if the other gear is in mesh, they will turn against the yarn.

With the roll running in the direction opposite to the yarn, the yarn naturally will pick up more emulsion than when running with the yarn. This fact provides a slight differential for each speed.

The mounting of the trough provides for both up-and-down and end-wise adjustment of approximately 1 in. each so that the entire trough can be given a true level and alignment from end to end. The machine itself should, of course, be in perfect level and alignment. Brackets for the emulsion bottles are provided with adjustment screws by which they are brought to the correct height. (Partially filling the bottles with water helps in establishing the level.)

The bottles may be mounted either at the head end on the sides of the drive head or at the remote end on the drive bracket. For a full-length machine, four bottles are recommended.

A splash guard, mounted at the back of the trough, drains excess moisture that drips from the yarn back into the trough, and the machine is, accordingly, kept clean.

*®

March, 1948

23-7-5

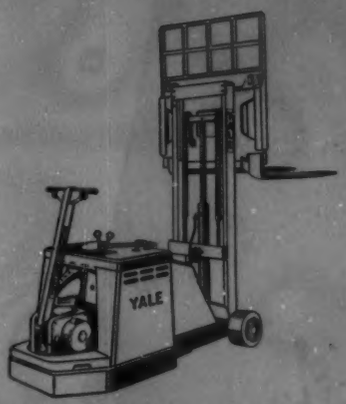
"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

"ON THE MOVE" WITH YALE

JUST A FEW PENNIES A DAY—That's all it costs to operate the portable Yale Midget King Electric Hoist. Simply pull a lever and it handles loads from ⅛ to 2 tons with ease, speed and safety. Other Yale Electric Hoists to 12 tons . . . hand chain blocks to 40 tons.



NEWEST ADDITION TO the Yale line is the Worksaver. It travels and lifts by electric power. Has 2 forward and reverse speeds. 7 styles, with capacities from 1,000 to 6,000 lbs.

HANDLING MORE MATERIAL with less effort is routine for Yale Hand Lift Trucks. Wide range of models. Single and multiple stroke; mechanical and hydraulic lift. Capacities from 1,000 to 20,000 lbs.

AWKWARD MATERIAL HANDLING JOBS are no trouble at all for this Yale Crane Truck—one of a group of the most complete line of electric trucks in the industry. It can lift, slew, boom and carry loads up to 10,000 lbs. with ease and speed.

NEW!

An All-Steel Scale with Outboard Bearings

"IT'S A YALE"

This new Yale Load King Dormant Platform Scale bears an old reliable name, yet it is so modern in design that there's not another quite like it. Its special outboard bearing construction makes it impossible to tilt no matter where the load is placed on the platform. This means you cut weighing time, get prolonged accuracy, lowest possible maintenance costs, increased scale life. Capacity to 11,250 lbs. Other Yale Scales to 60,000 lbs.

See your local telephone directory for Yale representative, or send for new Catalog R-T. The Yale & Towne Mfg. Co., 4564 Tacony St., Philadelphia 24, Pa.

TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

YALE

SCALES
HAND AND ELECTRIC HOISTS
HAND LIFT AND ELECTRIC TRUCKS

H & B RUBBER

A Typical Installation

The Achievement

Here at the Kanmak Mills in Kulpmont, Pennsylvania, H & B Rubber Covering Machines are used to produce covered rubber yarn of accurately measured, fully controlled elongation and balance. This quality Kanmak yarn is then used to make quality foundation garments; it's the quality that sells.

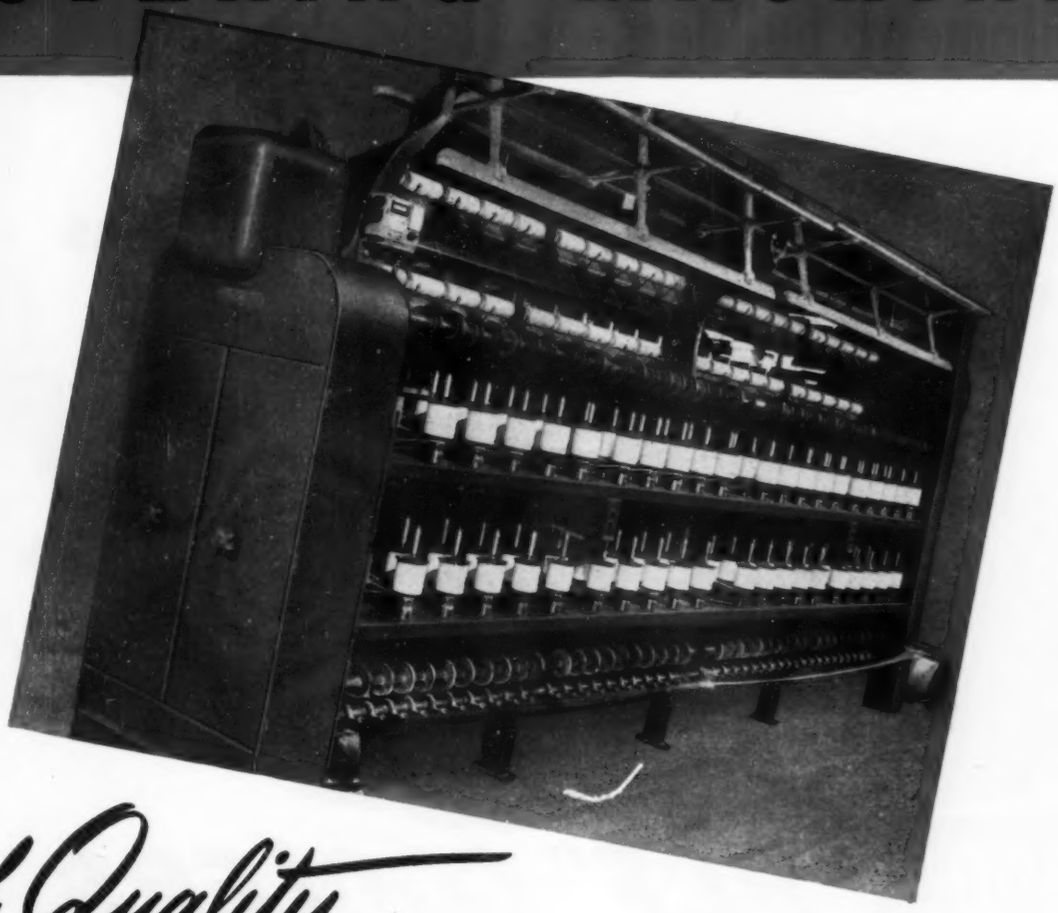
This emphasis on quality is typical of H & B textile machinery in general, and the prime reason for its growing popularity. Under the following close-up photograph of one of our Rubber Covering Machines at Kanmak is an imposing list of some of the features of this equipment, designed for the *achievement of quality.*

H & B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

COVERING MACHINES



of Quality

- Individual motor drive.
- All gears readily accessible and totally enclosed in head end.
- Variable elongation drive totally enclosed in head end.
- Ball bearing spindles.
- Variable upper spindle drive totally enclosed in foot end.
- Specially selected hardwood reels with aluminum arms.
- Cast iron spindle rails with rugged flanges.
- Rigid overall construction.
- Adjusting shoes on ends and samsons for easy leveling.

INSTALLATION STATISTICS for a 40-End Machine

Overall floor space	14′ x 5″ x 30″
Overall height from floor	6′ 2″
Horsepower required	5 H.P. motor
Total spindles	80
Regular size reel	54″
Net weight	3500 lbs.
Shipping weight	3800 lbs.

MACHINE CO.

Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U. S. A.

BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

Installed and recommended by a growing number of major equipment builders or their dealers

ROSS "BCF" COOLERS

For oil or water in small to medium size engines, turbines, gears or hydraulic presses

● A growing number of major equipment builders, in looking out for your interests, are installing Ross "BCF" oil and water coolers as *original equipment.*

On the other hand, many equipment builders leave it to their dealers to furnish Ross "BCF" Coolers as an optional accessory.

Either way, the chances are that the oil or water cooling will be done by a "BCF" unit when your next hydraulic press, plastic injection molding machine, die-casting machine, Diesel or gas engine, compressor, hydraulic coupling, torque converter, reduction gear, thrust bearing or turbine is placed into operation.

By this selection, both builders and dealers are providing you with: maximum heat transfer efficiency packaged in a compact, relatively small unit; extra rugged construction to withstand higher pressures; a favorable initial cost through standardization of a carefully engineered design; all nonferrous materials to prevent rust and corrosion; roller expanded, permanent, leak-proof tube joints; easy accessibility for inspection and cleaning.

It will be well worth your inquiring about the type oil or water cooler planned for your equipment. If it's not a Ross "BCF", familiarize yourself and then *insist* upon it! *Bulletin 4922, with complete design details, will be furnished gladly upon request.*

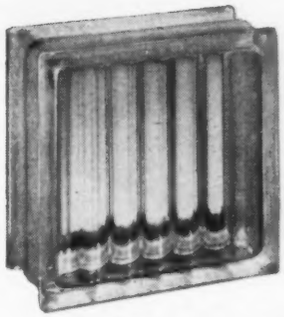
Ross Heater & Mfg. Co., Inc.

Division of American Radiator & Standard Sanitary Corporation

1461 WEST AVENUE BUFFALO 13, N. Y.

Ross equipment is manufactured and sold in Canada by Horton Steel Works, Ltd., Fort Erie, Ontario

Why PC Glass Blocks are the mark of a modern building



• PC Glass Blocks are not only smart and modern in appearance—they are also extremely modern in functional versatility, in the many ways in which they help to improve industrial operating conditions.

Panels of PC Glass Blocks admit plenty of clear daylight without color change. The line includes patterns that serve all lighting functions, including directing daylight to areas where it is needed. The insulating value of PC Glass Blocks eases the load on air-conditioning equipment in summer, saves fuel costs in winter.

Easily cleaned and rarely needing repairs or maintenance, PC Glass Blocks also effect a sharp drop in maintenance costs. All of which adds up to important savings.

Whether you are considering new construction or remodeling projects, be sure you have the latest information on PC Glass Blocks. Send the coupon for our new booklet today. Pittsburgh Corning Corporation also makes PC Foamglas Insulation.

Architect, Hugh Nelson.
Photo, Courtesy of Continental Rubber Works.

PITTSBURGH PC CORNING ®

GLASS BLOCKS

Distributed by PITTSBURGH PLATE GLASS COMPANY
by W. P. Fuller & Co. on the Pacific Coast and by Hobbs Glass Ltd. in Canada

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

Pittsburgh Corning Corporation
Room 623-8, 632 Duquesne Way
Pittsburgh 22, Pa.

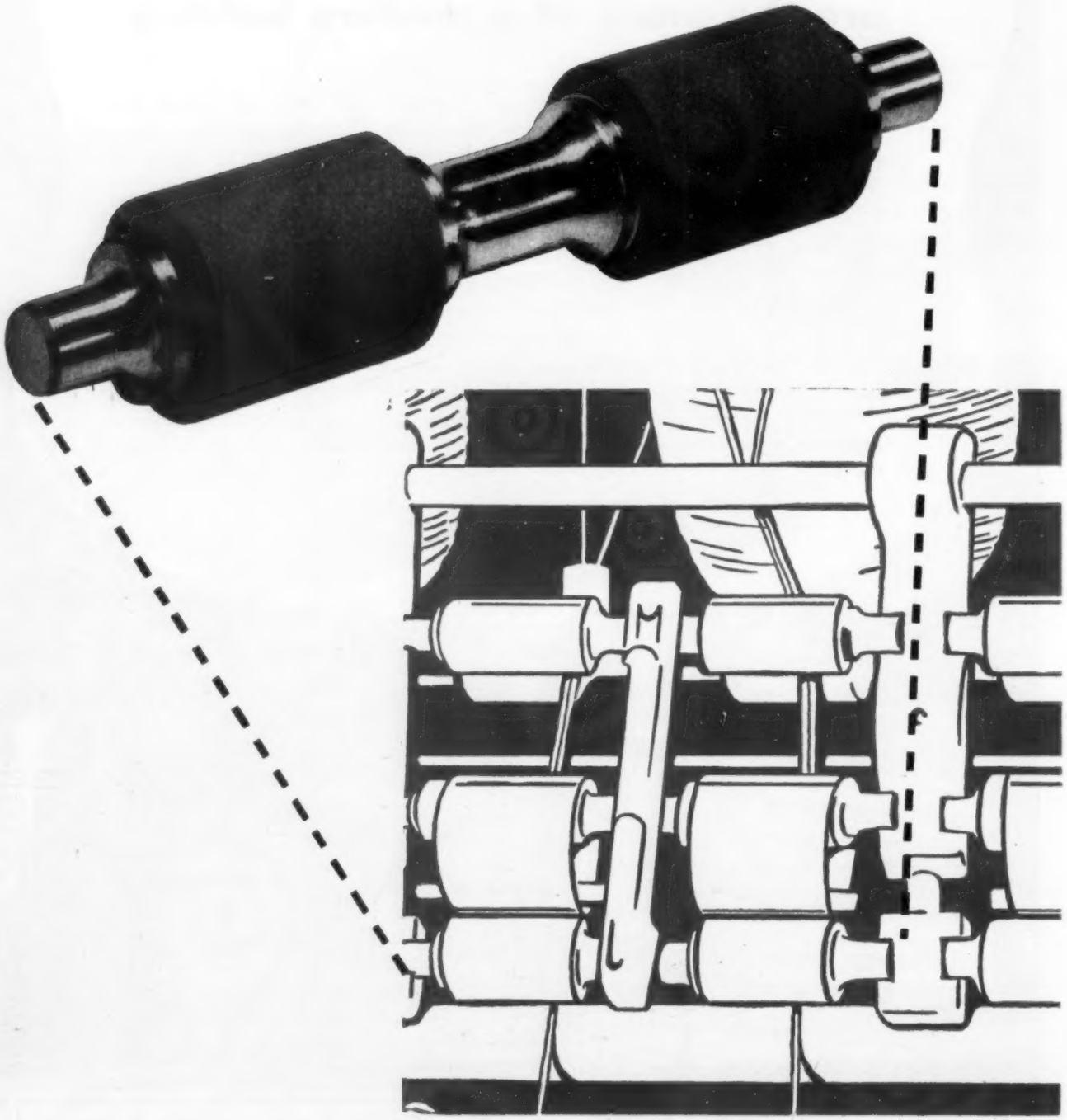
Please send along my free copy of your booklet on the use of PC Glass Blocks in Industrial Buildings. It is understood that I incur no obligation.

Name_____

Address_____

City_____ State_____

ACCOTEX COTS draft



ARMSTRONG'S ACCOTEX COTS

better because they resist slicking

YOU can count on better fiber control when you run on Armstrong's NC-727 Accotex Cots. That's because the synthetic rubber in this Accotex Cot is scientifically compounded with cork. The high friction cork helps grip the fiber firmly and evenly. Slicking is retarded. This long-lasting grip gives you more uniform drafting and higher quality yarn.

Besides drafting better, Accotex Cots offer all these important advantages:

LONG SERVICE—Accotex NC-727 Cots are tough. And they can be rebuffed at least five or six times.

REDUCED EYEBROWING—The resistance to slicking minimizes eyebrowing.

REDUCED LAPPING—Accotex NC-727 Cots have little affinity for textile fibers and are non-sweating even in humid weather.

GOOD START-UP—Accotex NC-727 Cots are non-thermoplastic and resist flattening.

SOLVENT RESISTANCE—Accotex NC-727 Cots are not affected by oil, water, dyes, or commonly used textile solvents.

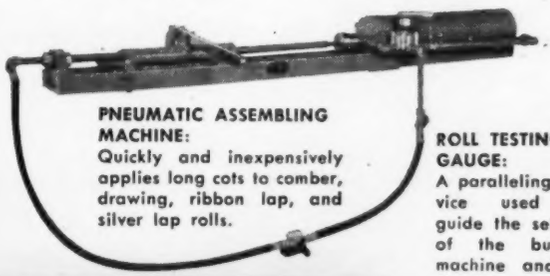
SEAMLESS CONSTRUCTION—Accotex NC-727 Cots have no seams, no structural weaknesses to cause failure in service.

QUICK ASSEMBLY—All Accotex Cots are ready glued for easier, quicker assembly.

Put these superior cots on a test frame today. See why Armstrong's Accotex Cots now serve more spindles than any other roll covering. They are made in various compounds, with and without cork. Your Armstrong representative will help you choose the best type of Accotex Cot for your particular service. Call him today. Or write to Armstrong Cork Company, Textile Products Department, 3603 Arch St., Lancaster, Pennsylvania.

ROLL COVERING SERVICE THAT'S COMPLETE

You can get everything you need for complete roll covering service from your Armstrong representative. He can supply not only all three modern types of covers but also the roll shop equipment required to apply and service them.

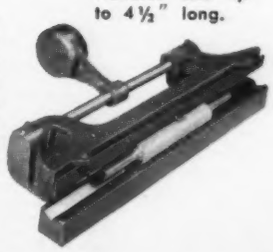


PNEUMATIC ASSEMBLING MACHINE: Quickly and inexpensively applies long cots to comber, drawing, ribbon lap, and silver lap rolls.

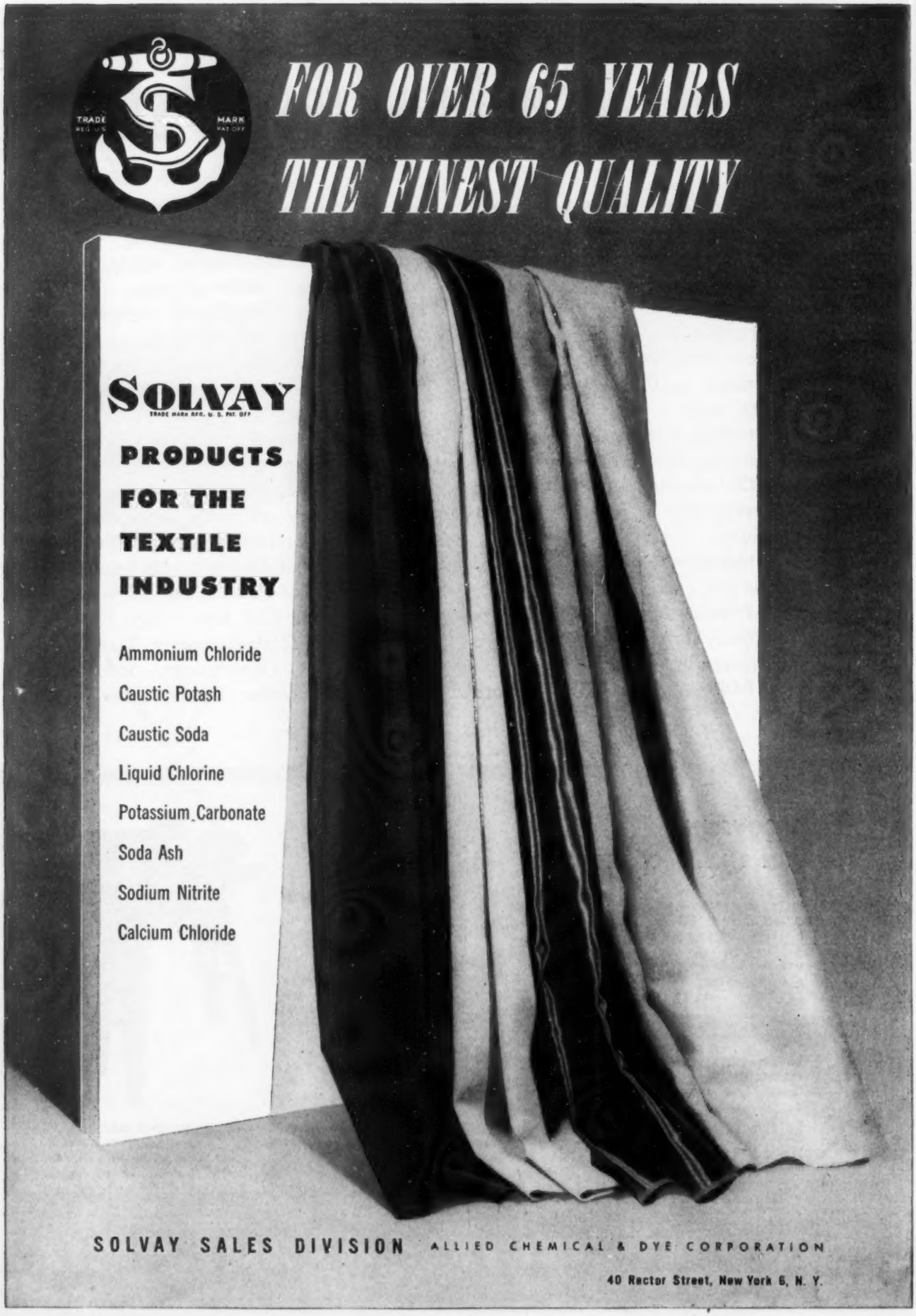
ASSEMBLING MACHINE: Hand-operated. Facilitates accurate, speedy assembly of ready-glued cork or synthetic cots to spinning and card room rolls. Handles cots up to 4½" long.

BUFFING MACHINE: Precision-buffs all modern types of cots. Adjustable for all lengths and diameters of rolls ordinarily used.

ROLL TESTING GAUGE: A paralleling device used to guide the setting of the buffing machine and to check trueness of rolls after they have been rebuffed.



CORK COTS
ACCOTEX APRONS
ROLL SHOP EQUIPMENT


FOR OVER 65 YEARS
THE FINEST QUALITY
SOLVAY
PRODUCTS
FOR THE
TEXTILE
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Ammonium Chloride
Caustic Potash
Caustic Soda
Liquid Chlorine
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SOLVAY SALES DIVISION ALLIED CHEMICAL & DYE CORPORATION
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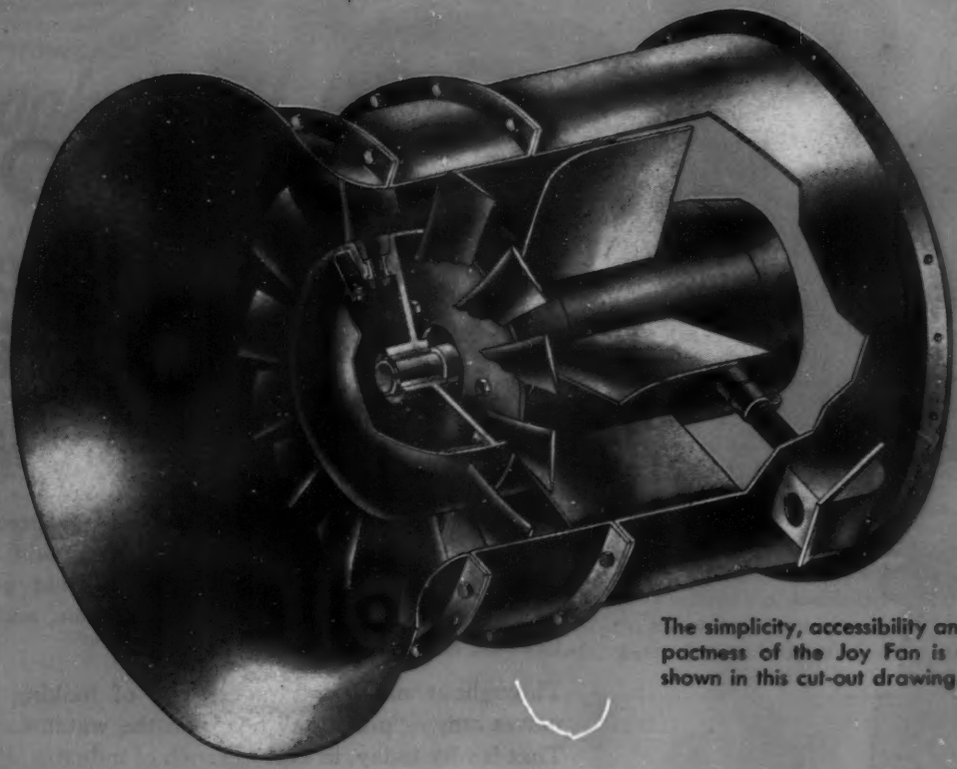


The simplicity, accessibility and compactness of the Joy Fan is clearly shown in this cut-out drawing.

"SERIES 1000"

JOY AXIVANE FANS

TROLLER DESIGNED

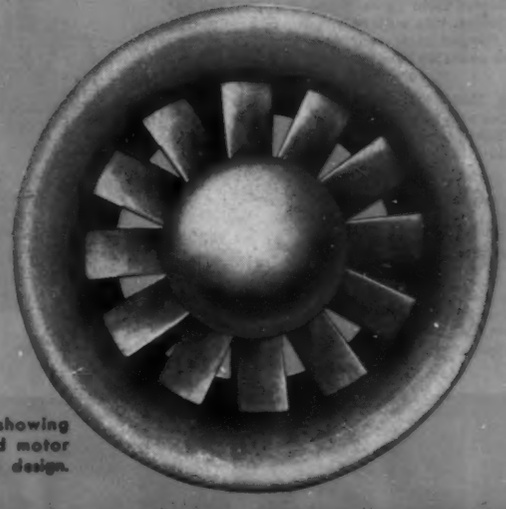
More efficient—lighter—more compact—easily and economically installed.

A very complete line of stock Vaneaxial fans in sizes and capacities to cover practically any industrial need.

Volumes up to 100,000 C.F.M.
Pressures up to 9.6" W. G.
Housing diameters 18" to 60".

Compact—easier to install—efficient—with an exclusive Joy feature, on-the-job adjustable Blades, permitting change of pressures and correction of duct resistance.

Write for Bulletin describing the "Series 1000" line—now ready!



Front view, showing self-enclosed motor and clean-cut design.

Call for a Joy Engineer

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

PRECISION ...the key to efficient valve performance

Needless to say, a valve must operate with precision to perform efficiently in actual service. But to make this possible there must be precision in everything that goes before—precision in design, in selection of materials, and in finishing to exact specifications.

Throughout more than a century of making valves—and valves only—"precision" has been the watchword at Powell. That is why today, in every branch of industry, Powell Valves are noted for efficiency under any and all service conditions.

And don't forget that Powell Engineers are always glad to help you select the precise valves to meet your individual flow control requirements.

The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

Fig. 1793

Fig. 1793—Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", inclusive. Has outside screw rising stem, bolted flanged yoke and taper wedge solid disc. Also available in All Iron for process lines.

Fig. 1503—Class 150-pound Cast Steel Gate Valve with flanged ends, bolted flanged yoke, outside screw rising stem and taper wedge solid disc.

Fig. 500—125-pound Bronze Gate Valve with screwed ends, screwed-in bonnet, inside screw rising stem, and either taper wedge solid or double disc.

Fig. 1969—150-pound Stainless Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke-bonnet and taper wedge solid disc.

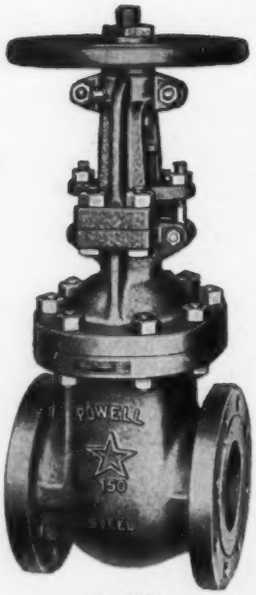


Fig. 1503

Fig. 500

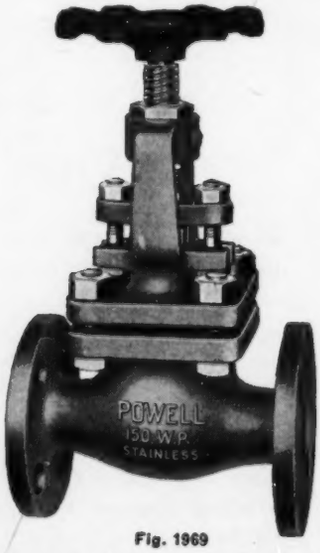
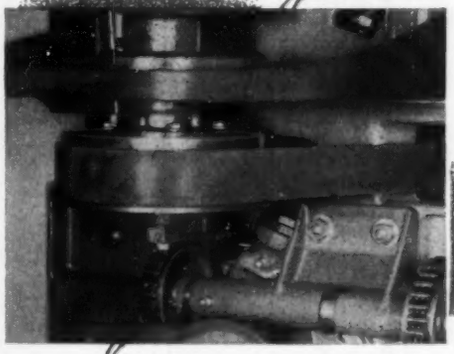


Fig. 1969

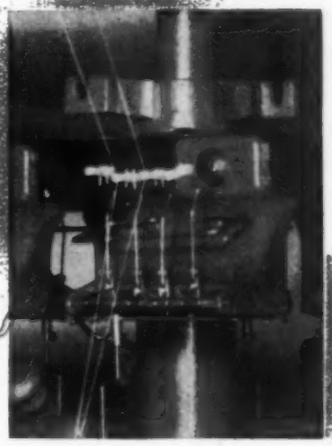
POWELL VALVES

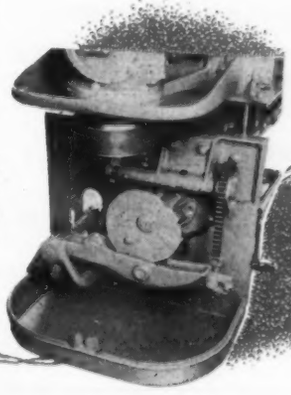
Looks Well ON ANY SHAPE ...tall, short or stout

Atwood Model 10 Ring Twister gives you a choice of three package shapes — tapered top, double-tapered or straight wind. On *any* shape, twist is uniform, winding smooth, yarn clean — because of these quality *controls*.



One endless, lapless Atwood drive belt serves all 100 spindles, delivering equal power to each spindle. Constant spindle speed means accurate twist from spindle to spindle.



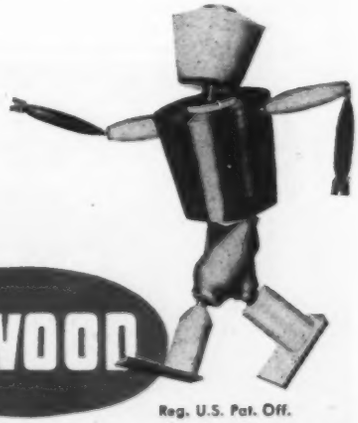


The accelerated cam used in the taper top builder motion results in each layer of yarn being constantly covered, so that there is no soilage and the finished package is smooth and clean.

Automatic stop motion stops *individual* spindle and feed roll simultaneously, so knots can be tied in single ends. This eliminates roller laps and single ends in the package.

The Ring Twister with Automatic Stop Motion for Every End and Ply

Write Us for Latest Bulletin



UNIVERSAL WINDING COMPANY

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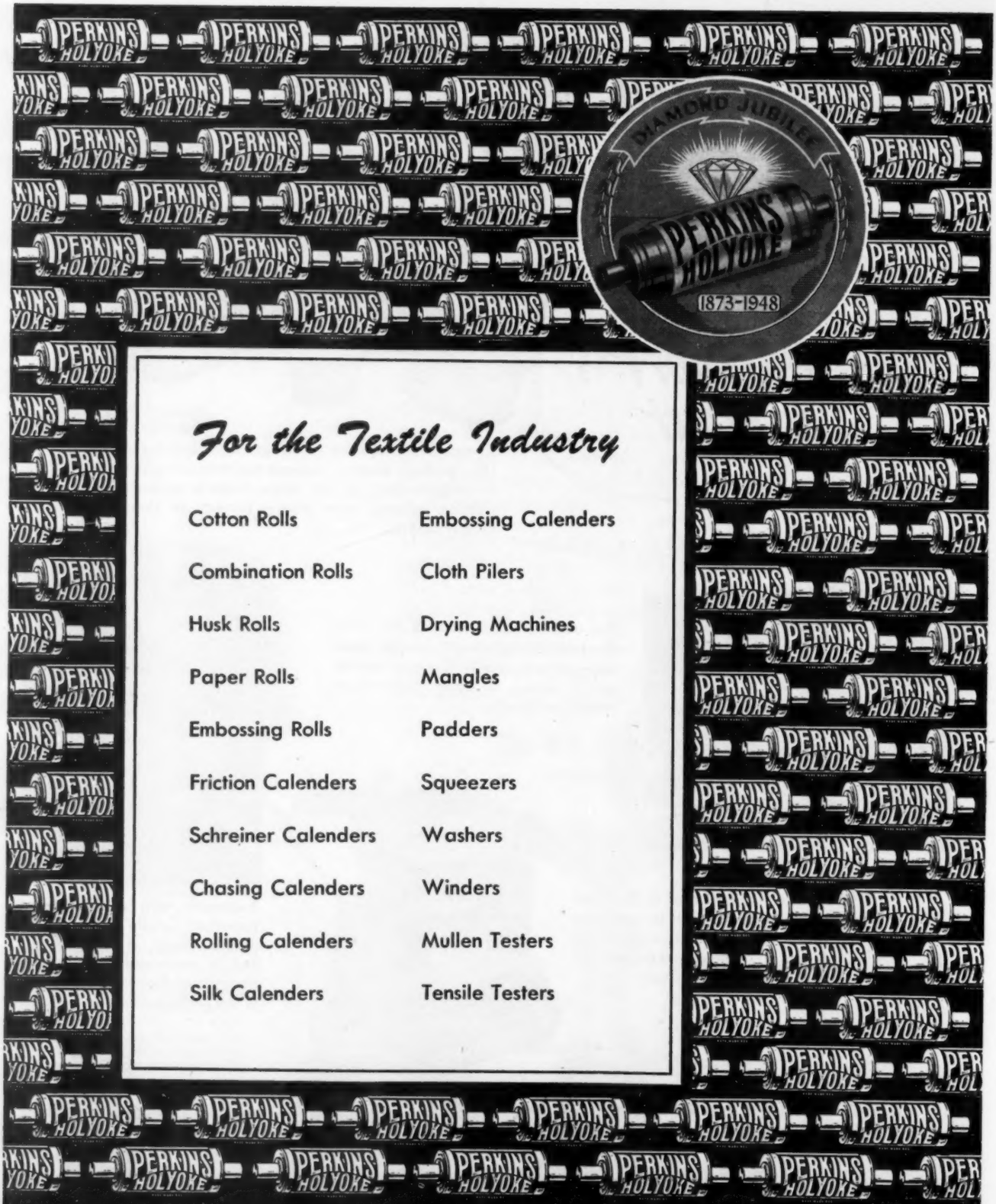
ATWOOD DIVISION

ATWOOD

Reg. U.S. Pat. Off.

Providence • Boston • Philadelphia • Utica • Charlotte • Atlanta • Chicago • Los Angeles • Montreal • Hamilton

Manchester, England • Paris, France • Basle, Switzerland • Agents in every principal textile center in the world.



For the Textile Industry

Cotton Rolls	Embossing Calenders
Combination Rolls	Cloth Pilers
Husk Rolls	Drying Machines
Paper Rolls	Mangles
Embossing Rolls	Padders
Friction Calenders	Squeezers
Schreiner Calenders	Washers
Chasing Calenders	Winders
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B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

it all depends on your point of view

When our customers think of STEIN-HALL some see laboratory smocks, microscopes and rubber gloves... and some see pin-stripe suits, brief cases and order pads.

The astigmatism needn't be corrected though, for STEIN-HALL actually is all of them ...and at the same time.

In our 82-year-old TEXTILE SALES DEPARTMENT... the laboratory equipment is responsible for studying, testing and improving our products... the salesman garb for telling *you* about them.

For 82 years now, we've been in perfect focus... which is why the name STEIN-HALL is among the most honored in the world.

Write for Quotations, Samples and Technical Information

STEIN SH HALL

285 MADISON AVENUE, NEW YORK 17, N. Y.

To Smoke Out "Hidden" Costs

Own Your Own
KELLOGG
SELECT-O-PHONE

PRIVATE AUTOMATIC TELEPHONE AND PAGING SYSTEM

You pay for it anyway—why not own it? Yes, in as few as two, three or four years, a Kellogg Select-O-Phone System can pay for itself by smoking out such hidden costs as these:

Lost business or customer ill-will from calls that are delayed or not completed . . . Reduced efficiency because people are away from their desks . . . Executive decisions that are delayed by busy lines or lack of facts . . . Wasted hours because the staff can't get together for a conference . . . Personal "outside" calls that tie up lines, waste time, run up charges.

Nor do the savings a Kellogg Select-O-Phone system effects stop here. It is the simplest system to install and expand — it requires no operator. It is your system; you pay no rent for it. And it is a real *telephone system*. There are no-shouting loudspeakers. In fact, it is the only system that allows unlimited simultaneous private conversations.

KELLOGG SELECT-O-PHONE DIVISION
KELLOGG SWITCHBOARD & SUPPLY COMPANY
310 West 6th Street **Kansas City 6, Missouri**

Select-O-Phone Division,
Kellogg Switchboard & Supply Co.,
310 W. 6th Street, Kansas City 6, Missouri
Please rush full information on how the Select-O-Phone System can save money for our company.

Name_____

Company_____

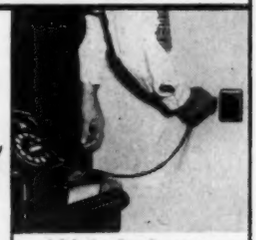
Address_____

City_____ State_____

BEFORE YOU BUY GET ALL THE FACTS MAIL COUPON TODAY!

Before You Invest in *Any* System Make Sure It Gives You *All* These Advantages

A Real Telephone System — Not Loudspeakers
Kellogg Select-O-Phone is a full-fledged TELEPHONE system, built by a company now in its 51st year of building and developing telephone equipment.



100% Conference Facilities
Kellogg Select-O-Phone is the ONLY system that permits EVERY telephone to be connected in a "conference circuit". ANY telephone can originate a conference. EVERY phone can reach every other.

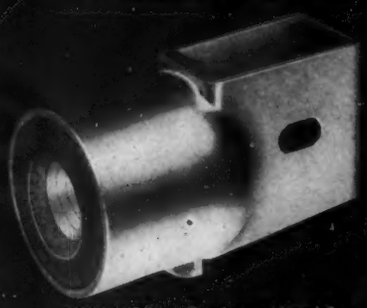
"Name Touch" Executive station available if desired • Long Life — Select-O-Phones have been in use as long as 30 years • Fully Automatic, Private and Secret • Extremely compact central switching equipment • Complete general call or individual code call system, fire or burglar alarm can be incorporated • Prompt Delivery.

Easy, Low-Cost Expansion
Expand as you wish—one telephone at a time — up to 36 telephones. Installation costs are negligible compared to other systems. Needs only 3-wire conductor to each telephone.

Satincast
THE "NEW LOOK" IN
COOPER
STAINLESS STEEL
FITTINGS
Satincast, smooth as satin itself . . . is a newly developed finish by COOPER ALLOY which is Standard on all COOPER Stainless Steel Fittings. Satincast finish is also available on Special Castings of moderate size.
* T.M. REG. PENDING
LUSTRACAST by COOPER
This famous COOPER ALLOY electrolytic polish for fittings and castings brings out the natural brilliant luster of Stainless Steel as well as greatly increasing its resistance to contamination and corrosion. Lustracast finish is available at a slight extra cost.
Specialists in Corrosion Resisting Stainless Steel
THE COOPER ALLOY FOUNDRY CO.
HILLSIDE, NEW JERSEY

GRATON AND KNIGHT

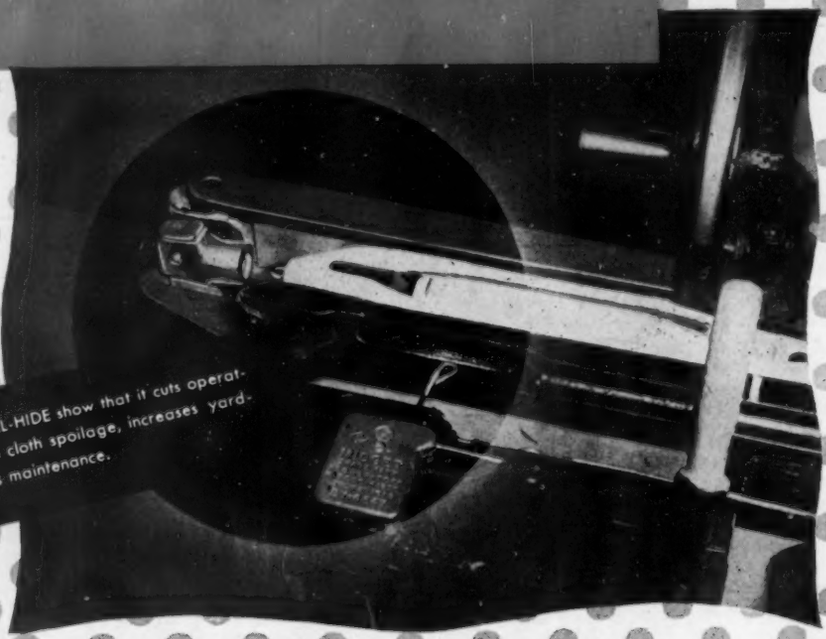
STEEL-HIDE



STEEL-HIDE . . . Graton and Knight's amazing new picker that combines long life with smooth performance.

"The Greatest Picker Development in Decades

You get more picks per picker dollar with Graton and Knight's amazing new STEEL-HIDE picker"



Loom tests of STEEL-HIDE show that it cuts operating costs, reduces cloth spoilage, increases yardage and reduces maintenance.

Here's what STEEL-HIDE can do for you:

1. CUT OPERATING COSTS . . .

because STEEL-HIDE combines longer life with smoother operation. Shock absorption is tremendously improved . . . rebound eliminated . . . laminated leather nose tailored to type of work: soft for quality rayon — hard rawhide for high speed cotton looms. Nose is accurately drilled to receive shuttle spur. Boxing problems are greatly reduced. STEEL-HIDE is interchangeable right and left hand . . . inventory is cut to a minimum.

2. REDUCE CLOTH SPOILAGE . . .

because picker maintains true alignment on stick due to patented loop construction*: leather cushion on front absorbs shocks — rubber cushion on back insures snug fit — steel lip prevents rocking.

3. INCREASE YARDAGE . . .

because exclusive steel-and-leather construction gives longer loom service . . . fewer shutdowns. Heavy gauge steel sheath gives extra strength . . . leather gives perfect resiliency.

4. REDUCE MAINTENANCE . . .

because all parts associated with picker action last longer. Stick breakage is reduced . . . shoe wear is reduced.

*Pat No. 2435748 — Feb. 10, 1948

Here's *why* STEEL-HIDE gives outstanding performance:

A Graton and Knight survey among mill superintendents showed that improved picker performance ranked high on their list of "wants". Graton and Knight's research staff then set out to develop a picker that would meet mill men's desired specifications. The result is the amazing new STEEL-HIDE. STEEL-HIDE'S patented loop construction holds it in rigid alignment on the stick. It is leather cushioned on the front for maximum resistance to impact . . . rubber lined at the back to insure a snug fit. STEEL-HIDE can't work loose, twist on the stick or rock.

The rugged, steel-and-leather construction of STEEL-HIDE combines the strength of heavy gauge steel with the natural resiliency of leather. The laminated leather nose with accurately drilled hole is permanently bonded to the steel sheath, and gives perfect shock absorption . . . there's no rebound and the impact is fully cushioned . . . result: your boxing problems are lessened.

STEEL-HIDE . . . its longer life is locked in steel

STEEL-HIDE COSTS NO MORE!

You get more picks per picker dollar with STEEL-HIDE'S superior features and performance . . . the *best* will save you money.

LATEST ADDITION TO THE

GRATON AND KNIGHT

ORANGE LINE LOOM LEATHERS

A complete line manufactured by the world's largest manufacturer of industrial leathers

FREE! Test Sample of STEEL-HIDE

No Obligation IF YOU USE A 1" x 19/32" STICK . . . Mail this coupon and get a free test sample of the great new STEEL-HIDE picker. (Other sizes available soon.) Put STEEL-HIDE to the test on a high speed loom . . . watch it out-perform all other loop pickers. Put it on a rayon loom and watch the smoothness of its action. YOU BE THE JUDGE!

Specify: Loom Model..... Loom Width..... Shuttle Width.....

☐ Narrow Nose (for looms with narrow (15¾") shuttles, such as rayon looms)

☐ Wide Nose (for looms with wide (16½") shuttles such as cotton looms)

NAME.....

POSITION.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....

GRATON AND KNIGHT COMPANY
327 FRANKLIN STREET, WORCESTER 4, MASS.

AS *Modern* AS THE *Rayon Industry*

AND STANDARD FOR THAT INDUSTRY

Photo Courtesy Liberty Throwing Company

NOPCO* 1111

PREMIER CREPE SOAKING OIL AND WARP SIZE SOFTENER

The rayon industry—one of the *most modern* of industries — turns naturally to *modern* machines, *modern* methods and *modern* processing materials to help increase volume, enhance quality and lower production costs — turns also to NOPCO 1111, acknowledged Standard of the Industry. Why?

Because today NOPCO 1111 means—as it has meant for more than a quarter of a century—many unique advantages for the Rayon Throwsters and Weavers throughout the world.

IT MEANS . . . unsurpassed softness and lubricity, higher winding efficiency, reduced ends down, fewer knots in yarn, more nearly perfect finished goods . . . controlled pebble . . . easy removal during boil-off . . . no volatilization in drying . . . complete freedom from oxidation and rancidity . . . plus other advantages that make NOPCO 1111—*now* as *always*—the premier product of its kind.

Read the two booklets widely accepted by the Rayon Industry for basic facts—"Important Points Regarding Rayon Warp Sizing" and "NOPCO 1111—Soaking Oil for Rayon Crepe Yarns". These valuable NOPCO booklets are available upon request.

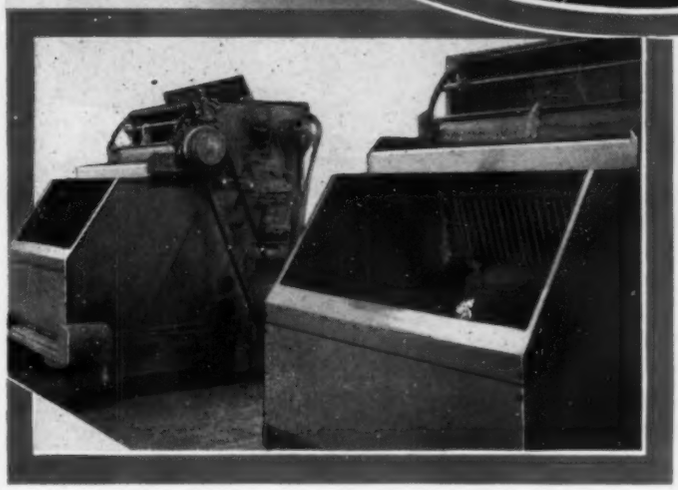
NOPCO CHEMICAL COMPANY, Harrison, N.J.

Formerly National Oil Products Company

Branches: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF.

*REG. U. S. PAT. OFF.

NOPCO EVOLVED THROUGH RESEARCH



Here are two Proctor and Schwartz feeders protected by Eriez Permanent Magnets. The elimination of the fire hazard plus the positive protection of the equipment result in very sizeable savings.

NON-ELECTRIC *Permanent* MAGNETS

BUILT FOR THE TEXTILE INDUSTRY.

DESIGNED and engineered for suspension above the spiked apron of a feeder, this Eriez Permanent Non-Electric Magnet removes *the* tramp iron from textile materials in process . . Here is maximum protection because materials are fully opened and traveling at slow speeds . . with the magnet installed at last point of operation where fibers enter cards or garnets . . Eliminate fires and damage to processing machinery by specifying powerful, permanent Eriez Non-Electric Magnetic Equipment . . Cut operating expense too! First cost is last cost . . no current or electrical accessories needed as Eriez units are *permanently magnetized* . . For full details on Eriez engineered magnets, clip and mail the coupon below.

Please send bulletin No. 104A and the following:
Data on Eriez Magnets for: TI-3
☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines
Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor
☐ Pneumatic Conveyor ☐ Equipment on Processing Machines
Name.....
Address..... City..... State.....

For Complete Textile Magnetic Protection . . . See Eriez First

ERIEZ MANUFACTURING COMPANY

150 E. 12th St., Erie, Pa.

Expert Supervision Knows
When Card Clothing Needs to Be Replaced

The Tufferizing Process—developed, owned and used exclusively by Howard Bros. — cuts and forms wires with an accuracy never before obtained in the making of card clothing. The wires are formed with precision and placed accurately in the famous Tuffer Foundation . . . when drawn on the cylinder they fit snugly — *sides perfectly parallel and every point in place.*

The top notch superintendent knows that the cards taking the brunt of the work need to be inspected more often than the others . . . and that if maximum efficiency is to prevail, *all cards* must have uniformly high quality clothing.

Precision-made Tuffer Card Clothing meets the requirements of those who *know* the best . . . and *want* the best! It increases production, improves the quality . . . and reduces carding costs.

For complete information ask our representative or write to any Howard Bros. plant or office.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

Branches: Philadelphia, Pa., and Blanco, Texas Direct Representation In Canada

A-2

TUFFER CARD CLOTHING

IMPROVES PRODUCTION ALL ALONG THE LINE

Cost Control Through Time Recording

Accurate cost accounting begins with accurate *time* accounting. IBM Job Cost Recorders give you that accuracy—to the minute. On these Recorders, workmen record, instantly and indelibly, the starting and stopping time for each job.

Daily job records made on an IBM Recorder quickly indicate productive and non-productive time. They are an important factor in determining prices, and give management the direct labor time figures needed to compile costs on every job.

An IBM representative will be glad to show you the many advantages of IBM Job Cost Recording systems.

DAILY COST CARD

Form No. 170012

No. 46 NAME George Bradley

CLOCK	LAPSED TIME	OPERATION & ORDER NO.		NO. PIECES	RATE PER C	AM'T EARNED
			OFF			
			ON			
			OFF			
			ON			
M 4.9			OFF			
M 4.0	.9	3799	ON	150	.86	1.29
M 4.0			OFF			
M 3.3	.7	3796	ON	75	1.06	.79
M 3.3			OFF			
M 1.5	1.8	3784	ON	700	1.31	9.67
M 12.5			OFF			
M 10.1	9.4	377V	ON	250	1.23	3.07
M 10.1			OFF			
M 8.0	9.1	3761	ON	50	4.82	9.41
	7.9					10.18

IBM

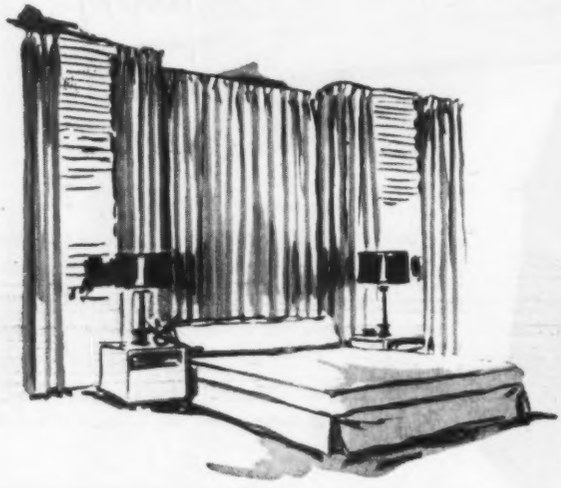
TIME RECORDERS AND ELECTRIC TIME SYSTEMS

Proof Machines • Electric Punched Card Accounting Machines and Service Bureau Facilities • Electric Typewriters

International Business Machines Corporation, World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.

Lanese*

synthetic fiber—the key to contemporary drapery and upholstery fabrics



With a definite preference for rich, luxurious decorative fabrics, home-makers are finding in fabrics made with Celanese Lanese synthetic staple fiber, a combination of beauty and practicality previously unattainable. Even when these fabrics are hung from ceiling to floor, over wide areas, and even when they are as heavy as one pound per yard, it is possible to obtain complete dimensional stability with Lanese. Tests in use have shown that the length these fabrics are hemmed is the length they remain, for they stay true to size despite wear or cleaning. What's more, drapery and upholstery fabrics woven with Lanese can be constructed in a variety of weaves. Through the use of Lanese, a wide range of brilliant colors is possible and combined with other fibers a variety of color effects can be obtained through cross dyeing.

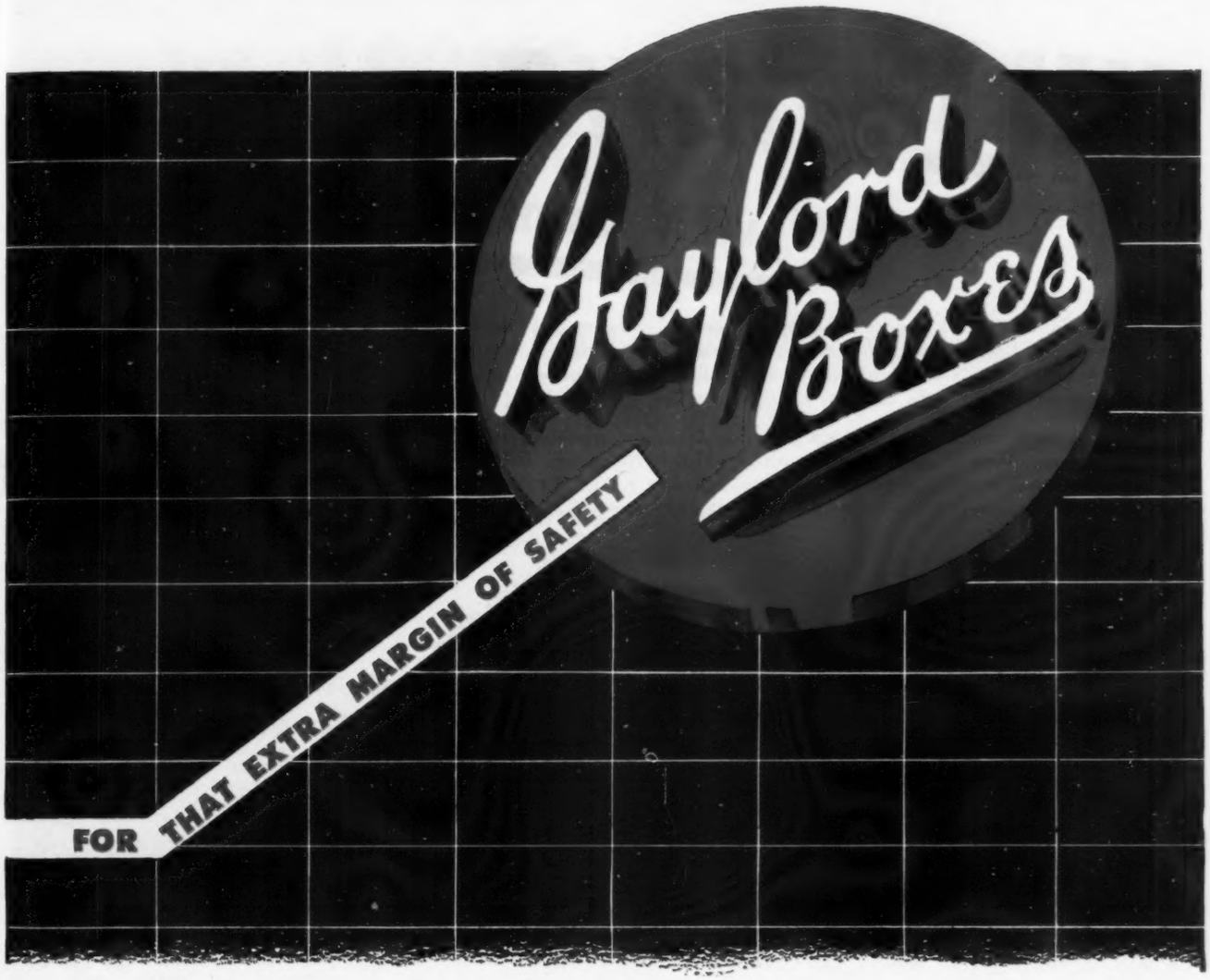
Celanese* Lanese*

SYNTHETIC STAPLE FIBER

CELANESE CORPORATION OF AMERICA, 180 MADISON AVENUE, NEW YORK 16, N. Y.

Branch Offices: PHILADELPHIA 7, 12 South 12th Street • CHARLOTTE 2, 1106 Liberty Life Building • BOSTON 10, 140 Federal Street

*Reg. U. S. Pat. Off.



Every step in handling—from your production line by truck, train, ship, or plane to the retailer and consumer is a challenge to the container that protects your product.

Gaylord correct functional design, better materials, and precision manufacturing provide that vital *extra margin* of safety.

Call or write the nearest office.

- Corrugated and Solid Fibre Boxes
- Folding Cartons
- Kraft Grocery Bags and Sacks
- Kraft Paper and Specialties

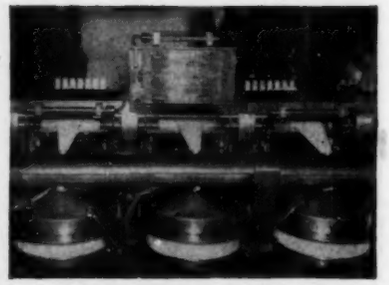
GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle
Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit • Jacksonville
Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des Moines • Oklahoma City
Greenville • Portland • St. Louis • San Antonio • Memphis • Kansas City • Bogalusa
Milwaukee • Chattanooga • Weslaco • New Haven • Appleton • Hickory • Greensboro • Sumter

KILL STATIC
with Complete Safety

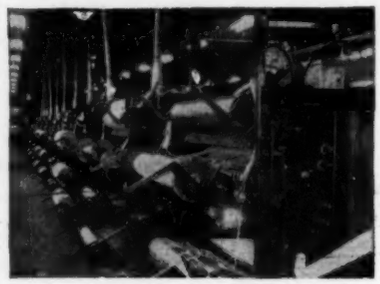
STATIC in textile mill routine is a costly nuisance. To maintain trouble-free and smooth speed production, static must be eliminated continuously and safely. Since 1904, thousands of mills the world over have been eliminating static with CHAPMAN equipment — efficiently, with complete safety, and at low cost

Obviously, there can be no "package" solution for static problems. CHAPMAN Static Eliminators are of several types, each of which is specifically designed to do its one job, and to do that job superlatively well — to KILL STATIC — whether at a single point or across any width of web.



Three slivers in a line of drawing — equipped with CHAPMAN Neutralizers. One clearer cover is raised.

Two lines of drawing, running blends containing wool, acetate rayon, etc. Equipped with CHAPMAN Neutralizers, insuring full production.



Line of Tape Condensers in a woolen mill, all equipped with CHAPMAN Neutralizers of the individual type.

A close-up view of a cotton card fitted with a CHAPMAN Neutralizer.

THE CHAPMAN STATIC ELIMINATOR

INSTANTANEOUS ACTION — TROUBLE-FREE

Textile mills everywhere report to us that CHAPMAN Static Eliminators are speeding their production by eliminating static at the point where static causes trouble; on the condensers of wool carding sets; over doffer combs; on Peralta machines, nappers, dryers; in the drawing process of making worsted type yarns on the American or modified cotton system; on cotton type drawing frames handling cotton or wool and the various synthetics, either alone or in blended combinations; in high speed warping and slashing, and many other operations.

Proven Safety & Efficiency

CHAPMAN Static Eliminators are absolutely safe. Over 40 years of *actual, continual use under varying conditions* have proven this. No shielding or any precaution is needed to protect operators. Neither operators, State or other governments object to its use. CHAPMAN Static Eliminators are silent and instantaneous in action; reduce the need for excessive humidity; require a minimum of maintenance. Operating cost is so low as to be negligible.

CHAPMAN STATIC ELIMINATORS ARE TESTED AND APPROVED BY THE UNDERWRITERS' LABORATORIES.

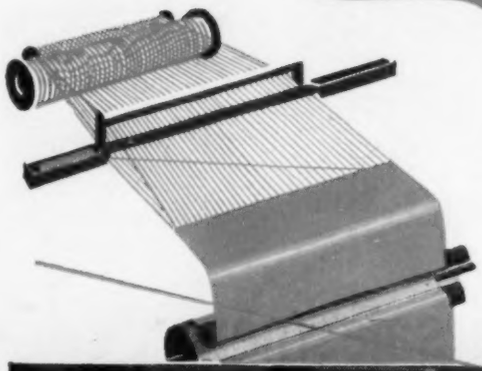
Chapman Engineering Service is available to you without obligation. Write us, and ask for your free copy of the CHAPMAN Handbook, Bulletin No. 66.

CHAPMAN ELECTRIC NEUTRALIZER COMPANY

ESTABLISHED 1904

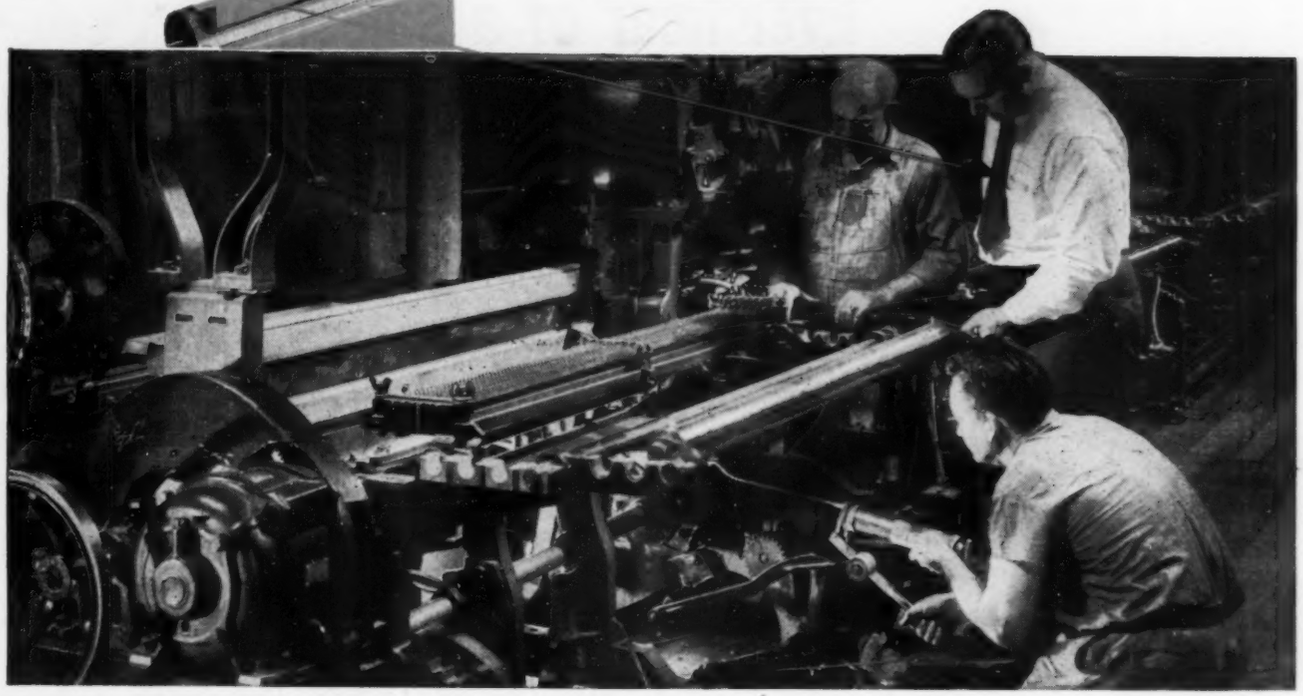
22-58 FORE ST., PORTLAND 6, MAINE

New LOOMS get the right start



for a long life...

when the Gulf Lubrication Engineer is "in the picture"



Operators of this progressive mill make sure of long equipment life—they keep the Gulf Lubrication Engineer "in the picture" as these new looms—and all new equipment—are installed.

IF you're installing new looms—or any other new equipment—you'll want to insure your large investment as thoroughly as possible against premature mechanical failures, below-par performance, and high maintenance costs.

Here you'll find the services of a Gulf Lubrication Engineer very helpful. He will make a complete survey of each unit of equipment and study your particular operating conditions to determine their influence on lubrication.

After analyzing every important factor, he will recommend for every piece of equipment the Gulf quality oils or greases which will provide maximum protection against wear. Then you can be sure you've made the right start—not only for a long life, but for a trouble-free life with low costs for maintenance.

For the co-operative counsel of a Gulf Lubrication Engineer, write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

One of a series *of messages to help you increase your understanding of business paper advertising, and its effect on your business.*

Ever hear of a salesman who knew how to sew?

SEEMS THERE WAS a young salesman who took a job with a company that makes electric blankets. He figured he could sell those blankets a lot better if he knew how to *make* one.

So he spent enough time in the factory to learn every step in their manufacture—cutting, wiring, sewing and all. The experience proved so valuable that today the company requires every salesman to *make* one of the blankets he sells.

That sounds like such a good idea that maybe it could work *both ways*. Let the *production man* learn something about how they sell what he makes. The result should be a better job in both departments, for producing and selling have one important thing in common. Both thrive on *mechanization*.

In the manufacture of a sale, for example, it usually takes five separate operations to find a prospect and convert him into a customer. To expect the salesman to perform all five would be like manufacturing the product itself entirely by hand—slow and far too costly.

So the salesman depends on a *machine* to take over part of his selling job. Finding prospects, arousing their interest, creating a preference for his company's product or service—all these operations must be *mechanized* if sales are to be manufactured at a profit.

Advertising is the machine that puts selling on a mass production basis. And in the business press—with its tremendous concentration of hand-picked readers—the machine operates at its *highest efficiency*.

Just how efficiently does business paper advertising work? If you'd like to see some examples, we'll be glad to send you a recent ABP folder on actual results. Also, if you'd like reprints of this advertisement (or the entire series) to show to others in your organization, you may have them for the asking.

TEXTILE INDUSTRIES

is one of the 129 members of The Associated Business Papers, whose chief purpose is to maintain the highest standards of editorial helpfulness—for the benefit of reader and advertiser alike.

YOU can profitably use one or more of these ROTARY IMPACT TOOLS

NO KICK
NO TWIST
EVEN ON THE TOUGHEST JOBS

AMAZING all-purpose ELECTRIC TOOL will

- Drill up to ¼" dia.
- Ream up to ½" dia.
- Tap up to ½" dia.
- Run Nuts up to ⅜" dia.
- Drive Screws up to ⅜" dia.
- Hole Saw up to 1½" dia.
- Bore Wood up to 29/32" dia.
- Drive Studs up to ⅜" dia.
- Drill Masonry up to ⅜" dia.
- Extract Broken Studs up to ⅜" dia.
- Wire Brush up to ⅜" dia. shanks.

(Uses Standard Attachments)
(110 V or 220 V Models available)

Only one Ingersoll-Rand *all purpose* Impact Tool is required to perform all of the operations listed. The ratings are very conservative and many jobs in excess are being easily handled by the powerful "rotary impacts".

What other electric tool will permit you to do these tough operations without any kick or twist to the operator? Plug it in any wall socket—it is reversible with full power in either direction—it weighs only 6½ pounds, but what an amazing tool for getting all those jobs done!

Ideal for installation crews—one manufacturer has equipped his installation crews with IMPACT Tools and attachments. Now, in place of 3 or 4 electric tools they carry only one and also save from 10 to 20 percent of the installation time.

Don't hesitate, call your nearest distributor now for a demonstration of this labor saving—time saving *all purpose* IMPACT Tool. They're available for immediate delivery.

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43* MODERN MACHINES

COMPRISING 7 COMPLETE RANGES

Built and Installed by

MORRISON

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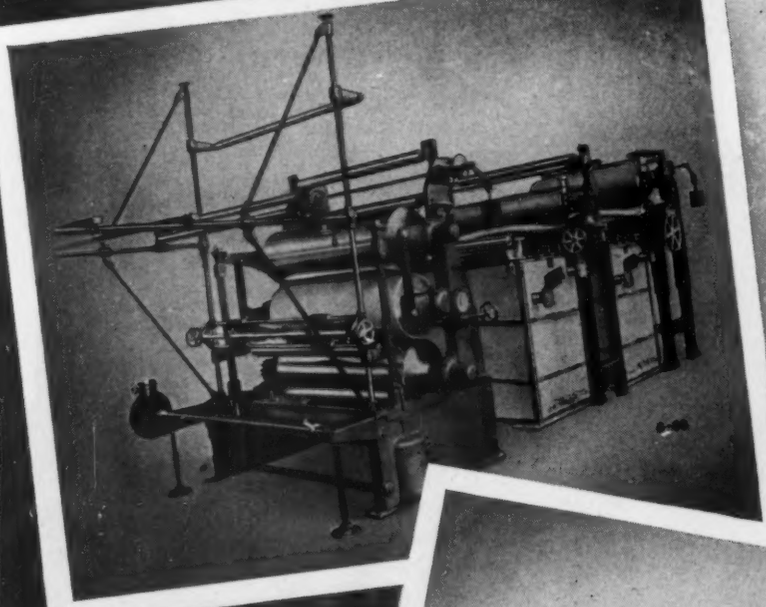
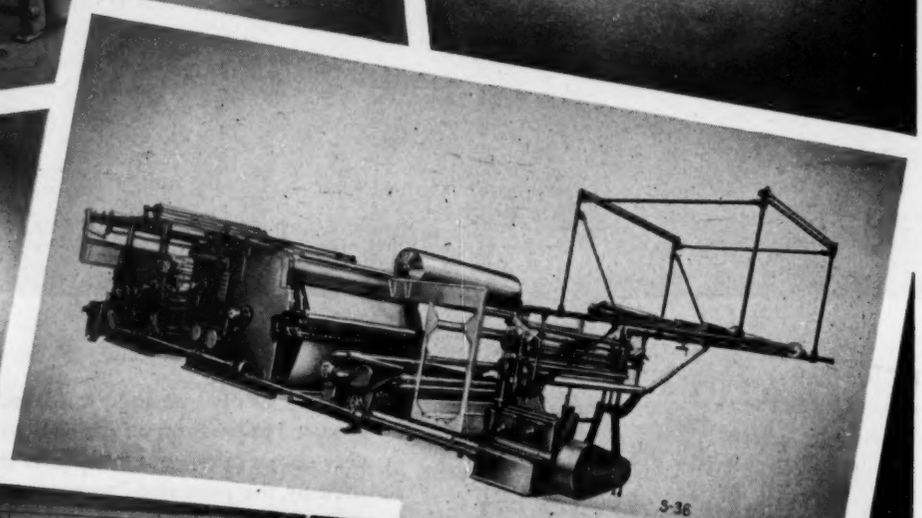
Pepperell



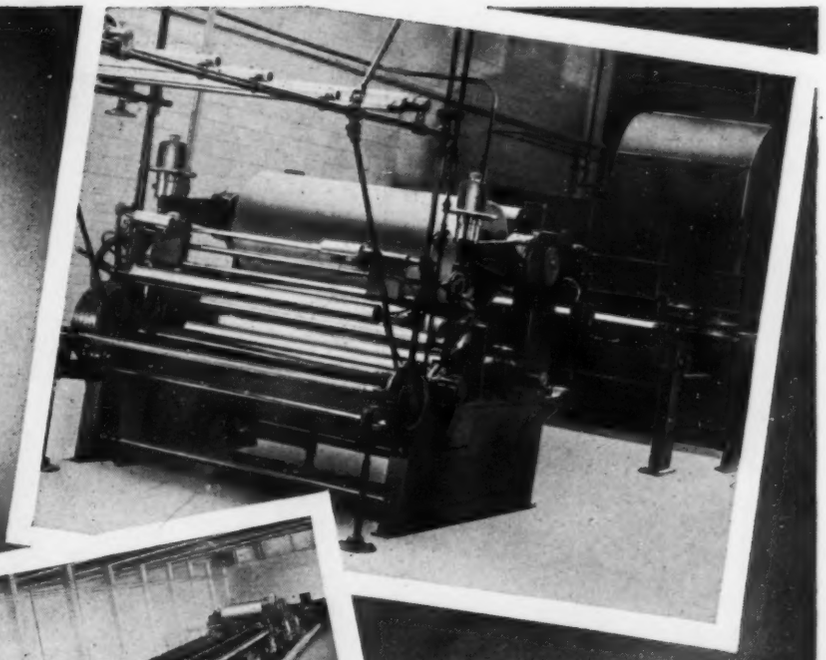
LEFT 15-Ton—3-Roll Padder and 2 Stainless Steel Williams Units, 5-Ton Microset Nip and 10-Ton Microset Nip



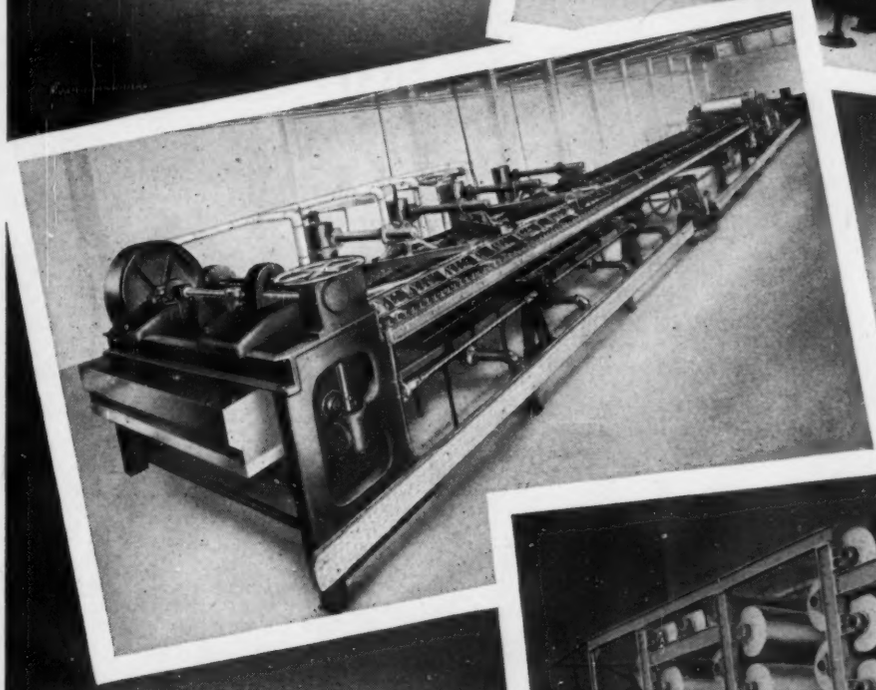
RIGHT Duplex Compressive Shrinking Machine showing Control Roll Unit, Skyer, Clip Expander, Main Unit, Auxiliary Unit, and Folder

LEFT Standard Tenter (2) Entering end section, showing Electric Guiders, Clips, wide rail rugged frame construction, and removable phenolite side strips.

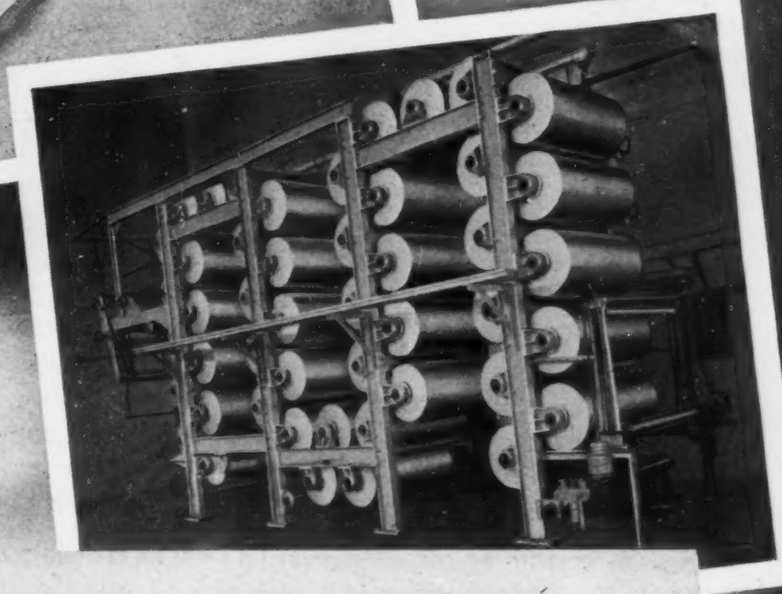
*Photos show a few Morrison machines which are similar to the 43 built and installed for the new Pepperell Bleachery, Opelika, Alabama.



RIGHT 15-Ton — 2-Roll Microset Padder, complete with Tension Rails, Air Guiders, Let-Off, rubber covered Expander, Pressure Levelling Device, Compensator, and Take-up.



LEFT Mercerizing Tenter viewed from delivery end, showing overhead drive, wide rail rugged frame construction, patented Clips, removable phenolite strips, power opener side shaft, and Scott suction system.



RIGHT 47 Can Dryer viewed from entering end, showing rigidly constructed framework, Stainless Steel Dry Cans, Compensator, rubber covered Expander, and Folder.

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—LOOMS BIG

When "work" runs bad—when production is cut because of "pick-outs" and the percent of "seconds" is on the increase, look behind the looms. Lack of air for "blow-down" between beam doffs and during "scheduled cleaning" periods because of air compressor or vacuum pump failure often lowers quality and production. Correct lubricants best assure unfailing performance.

A long history of satisfactory performance lies behind the use of RUBILENE OIL for the lubrication of textile mill auxiliary equipment. Its fine qualities make it first choice for this important job of lubricating heavy-duty air compressors and vacuum pumps. Let us advise you on the correct grades of RUBILENE for your specific installations.

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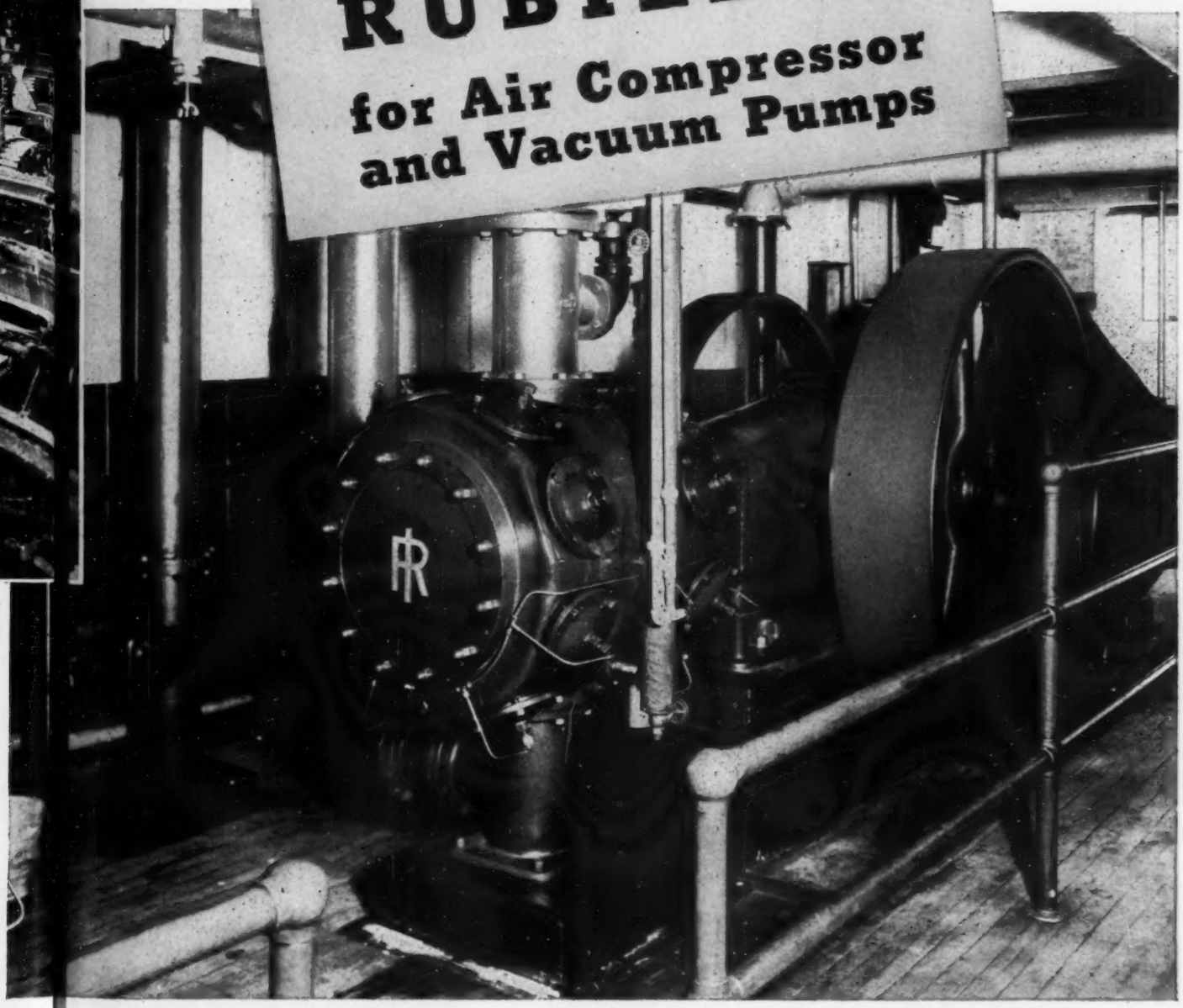

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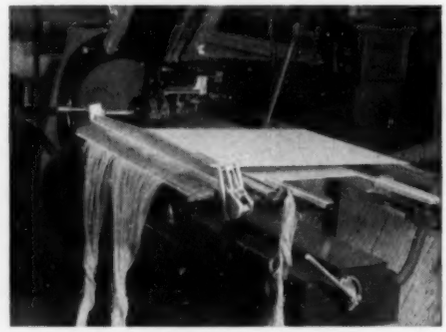
BARBER-COLMAN MODEL "LL" *Portable* WARP TYING MACHINE

THIS "UNIVERSAL" MACHINE TIES IN EITHER PLAIN OR LEASED WARPS WITH EQUAL SPEED AND EFFICIENCY

Under the conditions of modern styling, many mills need versatile equipment to handle frequent changeovers between filament and spun synthetic yarns. The Barber-Colman Model "LL" Portable Warp Tying Machine is extremely useful under such conditions because of its adaptability. It is a combination machine, with interchangeable selector mechanisms to select from either an end and end lease or a flat sheet. A trained operator can make the necessary changes in less than ten minutes. The production rate when tying from an end and end lease is the same as when tying from a flat sheet. Under average conditions, a good operator can tie up to 4000 ends an hour, or better. This machine is particularly valuable in mills where both flat and end and end leased warps are coming through, and where the use of separate machines is not justified as they would not be utilized to their fullest capacity.



Barber-Colman Model "LL" Portable Warp Tying Machine set up to tie in new warp from a flat sheet.

The same machine as above, but now loaded for tying-in leased warps, as shown by the lease rods.

AUTOMATIC SPOOLERS-SUPER-SPEED WARPERS-WARP TYING MACHINES-DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

A recent installation of Model "L" Cards at Alma Mills, Gaffney, S. C.

WHITIN MACHINE WORKS ANNOUNCES ITS NEW MODEL "L" CARD

WHITINSVILLE Jan. 1947 (WMW) Whitin Machine Works today announced the new Model "L" Card. The development and building of this machine is said by officials of the company to represent an important step forward in cotton carding. The card has been thoroughly tested under mill conditions with entirely satisfac[illegible]

UP-TO-DATE *Report* ...on an up-to-date CARD!

Our new Model "L" Card was first announced to the industry a year ago through the textile trade journals. Since then the wide spread acceptance of, and demand for this model has proved its exceptional merit.

Literally hundreds and hundreds of these cards have been built and installed. Reports from mill after mill are always the same . . . favorable reports of better production, greater efficiency, increased cleanliness and quieter operation.

Numbered among the many new and beneficial features of the Model "L" Card are:

- Card frame, cylinder bearing pedestals, and arches have been strengthened to provide greater rigidity which is especially beneficial in maintaining card settings.
- Improved Top Flat Drive, Spiral Brush Drive, Coiler and Calender Drives are provided.
- Feed Roll weighting has been simplified, and the Feed Plate has been strengthened to resist pressure deflection.
- Oilite bearings have been provided in many locations to insure better lubrication.
- All gears have cut teeth for quieter operation.
- Surfaces and Contours have been restyled to facilitate cleaning.
- Adjustments can be made with greater ease and convenience.

These and many other features combine to make this model an up-to-date, smoothly operating, highly efficient card. Write today for our illustrated folder giving complete details and technical data.

Whitin MACHINE WORKS

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PRODUCTION UP 15%... YARN QUALITY IMPROVED *WITH IONOTRONS!*

Another example of how textile static problems are being solved with the Ionotron Static Eliminator®.

In the Strong Hewat & Co. Inc. mill, static was responsible for bad feeds, light feeds, spoilage, and stoppages on the wool card.

Then two Ionotrons were installed on the Peralta. Following the installation of the Ionotrons, Joseph P. Cusson reports that production is up at least 15%. The card runs steadier, spoilage is reduced 15 to 20%, and machine operating time has increased. In addition, the yarn is better quality because it is more uniform in weight. Additional Ionotron applications are planned.

Further textile applications — Successful applications of Ionotrons to textile machinery include use on wool cards, drawing frames, cloth folding arms, nylon boarding machines and many others.

For smoother production — The Ionotron aids production by eliminating bunching, lapping, and other problems caused by static charges in textile fibers. This reduces frequency of shutdowns. It results in more uniform windings, simplifies fabric-coating operations, and improves working conditions by permitting a substantial reduction in humidity.

Permanently effective, no operating cost — Heart of the Ionotron is a permanent source of alpha radiation that "bleeds off" static charges before they become a problem.

There is no contact between the Ionotron and fibers or fabric, no moving parts, no power connection and ***no operating cost.*** Atmospheric conditions have no effect on the efficiency of the Ionotron. Installation is simple, involving only brackets and bolts.

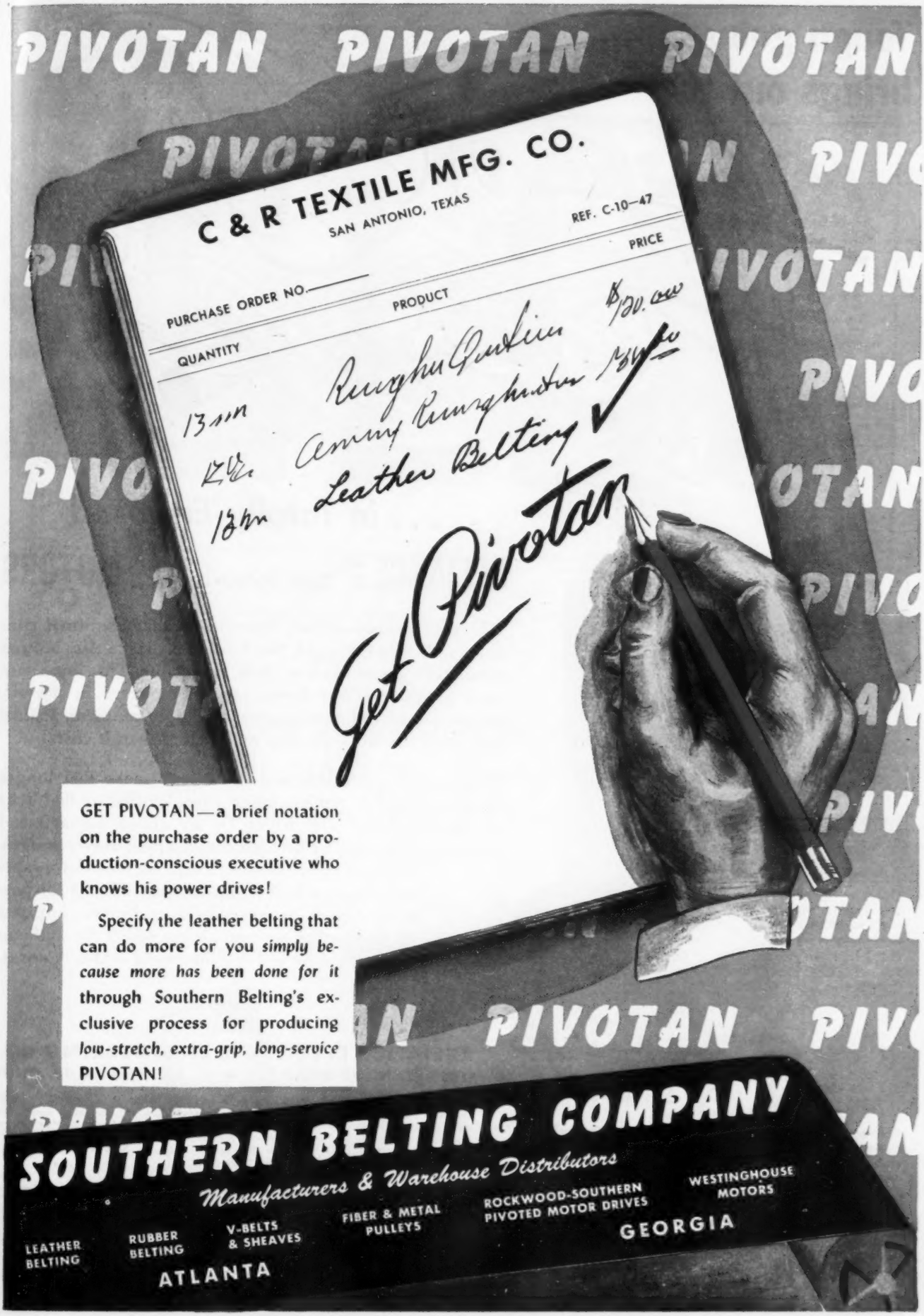
For more detailed information — For full details on application of Ionotrons to your worsted or wool machines, write to Davis & Furber Machine Co., North Andover, Mass.

For other textile applications of the Ionotron, send details of your static problem to Dept. M-7, U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.

Arrow shows location of Ionotron Static Eliminator on Peralta in the Clarksburg, Mass. mill of Strong Hewat & Co., where it has eliminated wool card static problems, and improved production of their high-quality suitings and coatings.

U S RADIUM

IONOTRON *Static* ELIMINATOR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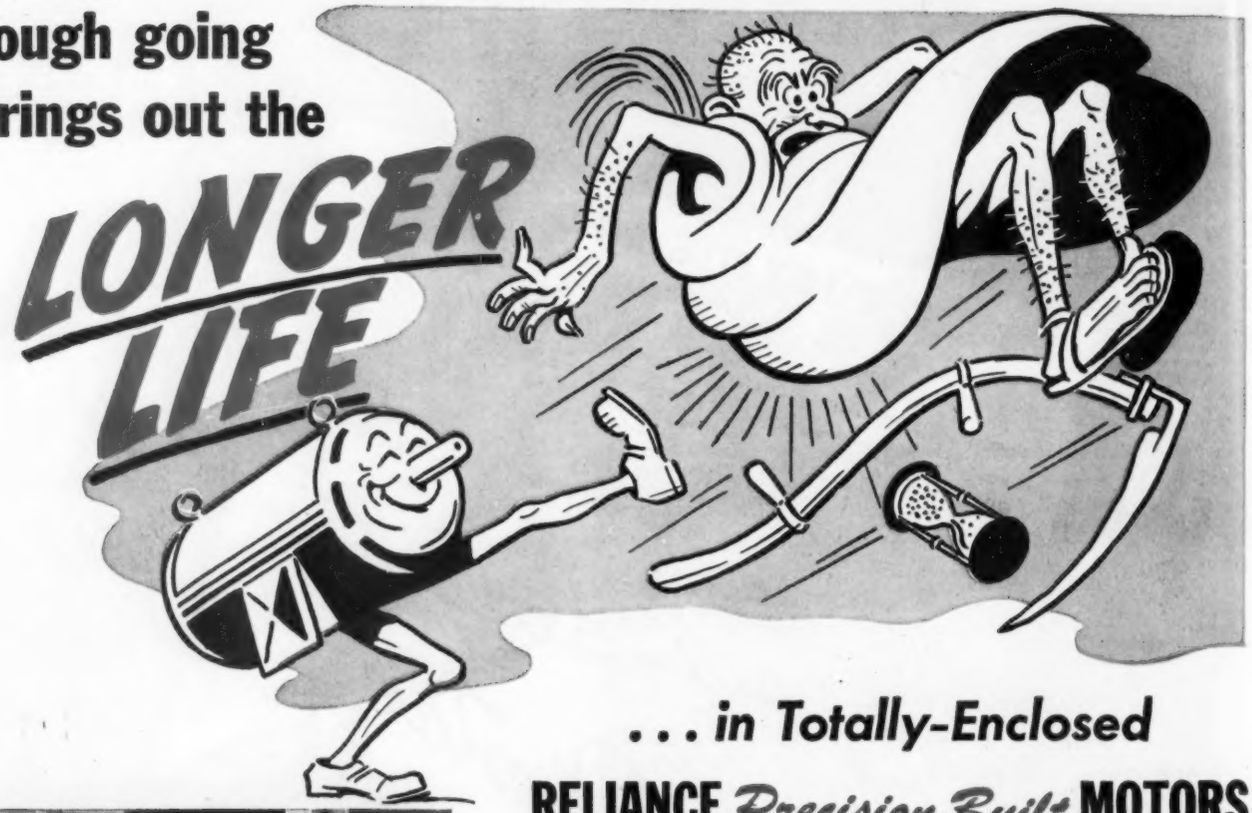
Tough going brings out the LONGER LIFE



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Wherever motors operate frequently under abnormal conditions, Totally-Enclosed, Fan-Cooled Reliance A-c. Motors continually amaze users by their longer life. That important extra protection they have—against moisture in the air, against liquids splashed or streamed right on them, against dust and abrasives—pays so much more than it costs!

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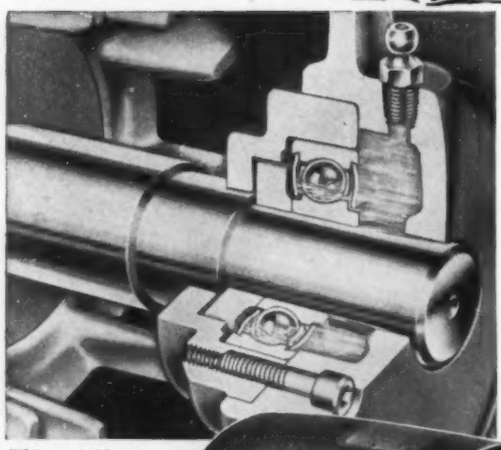
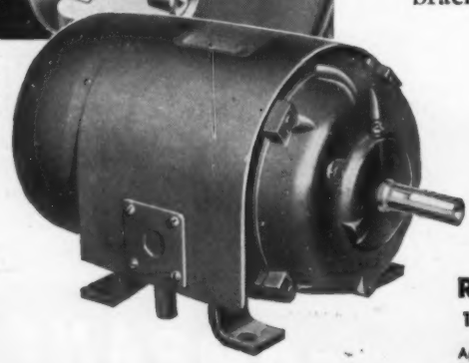
Thirteen-point winding treatment includes six special steps to assure the most effective insulation possible. And an improved bearing design eliminates all lubrication worries! Write today for Bulletin C-125 (Bulletin C-218 if interested in D-c. motors).



This special bearing design protects Reliance Precision-Built Motors indefinitely!



***Reliance Totally-Enclosed, Fan-Cooled, Precision-Built Motor.** For convenience, conduit box of Reliance Motors may be mounted in any of four positions or completely eliminated, as shown here.*

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Weaving performance tests on cotton and spun rayon, conducted by a number of the country's leading textile mills, have proven that the separate application of SLIX materially reduces both warp and filling stops.

● **Results of these tests, and other technical information regarding the application of SLIX, appear in illustrated bulletin, "Developments in Warp Sizing," available upon request. Send for it today.**

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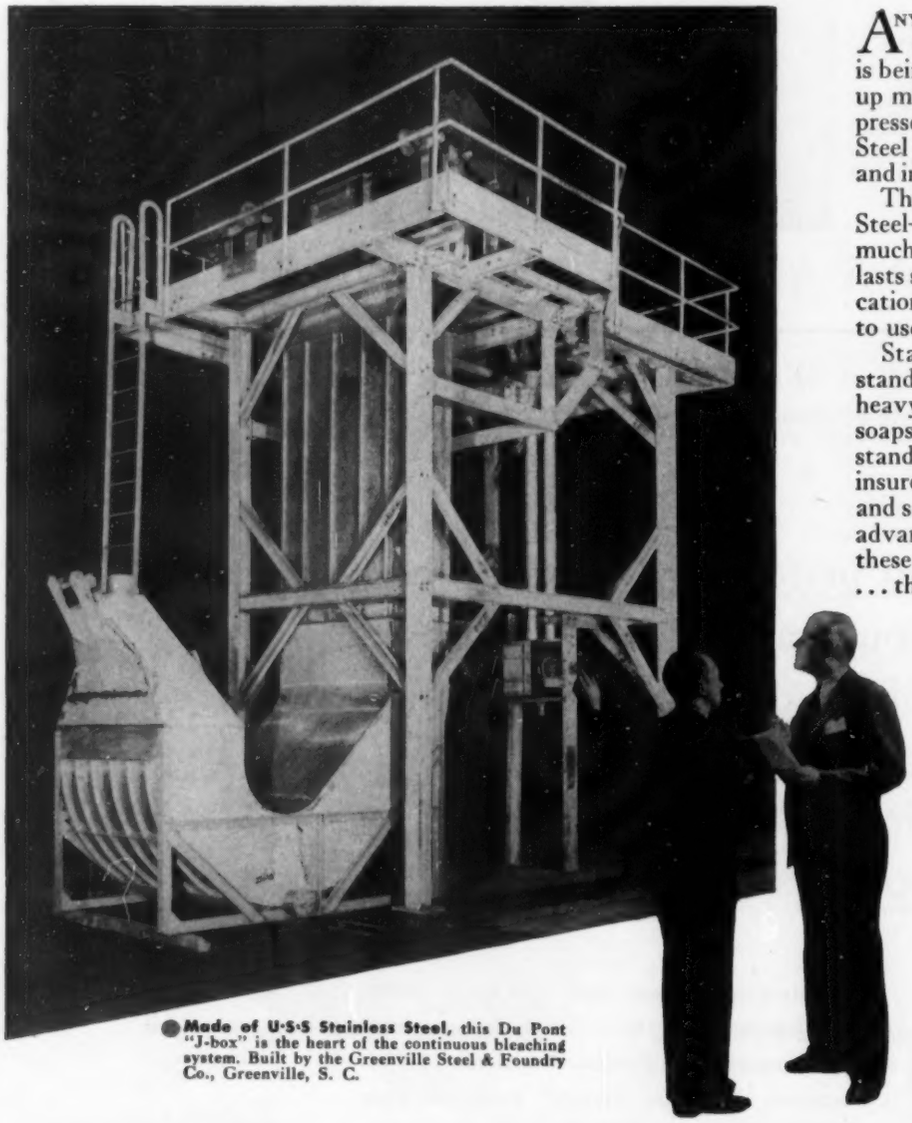

Made of U·S·S Stainless Steel, this Du Pont "J-box" is the heart of the continuous bleaching system. Built by the Greenville Steel & Foundry Co., Greenville, S. C.

ANY textile man, reviewing the great variety of fine, new equipment that is being developed to improve and speed-up mill production, cannot fail to be impressed by one striking fact — Stainless Steel is being used in greater amounts and in many more places than ever before.

The reason for this is simple. Stainless Steel—although it costs more—will *do* so much more, will do it so much better and lasts so much longer, that for many applications it is by far the cheapest material to use.

Stainless Steel's superior ability to stand up under the wear and tear of heavy runs—to resist acids, bleaches, soaps, dyes and other chemicals—to withstand abrasion and rough treatment—to insure perfect protection against rusting and scaling, all combine to give it marked advantage over other materials. And these properties are inherent in the steel . . . they cannot wear or chip off with use.

In addition, Stainless Steel's dense, polished surface makes fast, thorough cleaning a simple matter, saves time and eliminates color bleeding and carry-overs. Its permanent smoothness insures freedom from snagging, avoids damage to yarns and delicate fabrics.

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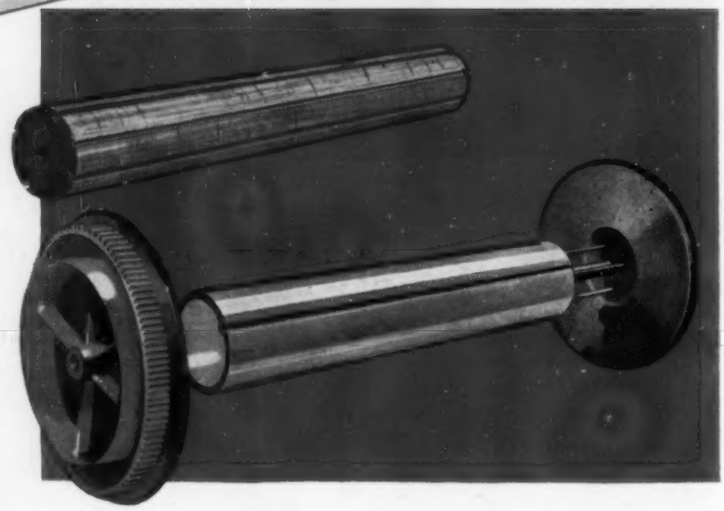

You can rebuild your loom beams better than new in your own machine shop. Or Alcoa will be glad to refer you to shops that can do it for you. ALUMINUM COMPANY OF AMERICA, 1473 Gulf Building, Pittsburgh 19, Pennsylvania.

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that cotton yarn might be better

When nine years old, John Mercer left the farm in Dean, England, where he was born February 21, 1791, and began his notable career in textiles as a bobbin-winder. At the age of ten, he tackled the three "R's" and began the study of instrumental music.

After serving his hitch in the militia, where he was called "Awkward John", and put into the band, Mercer re-entered the textile field and won many honors in chemistry.

In 1850 he patented the process which makes undivided cotton fibers become thicker and shorter, and the strength of the fibers is greatly increased. "Mercerizing" also makes the yarns semi-transparent, and it dyes far more rapidly than ordinary yarns, due to the swelling of the cell walls of the fiber. Named for him, this process is called "Mercerizing".

John Mercer, died in 1866, mankind having been benefited by his existence.

While adhering to the basic principles of the Mercer process, Aberfoyle, today, through continous research produces still finer, stronger, more beautiful and durable cotton yarns than ever before—Aberfoyle Mercerized Yarns.

Made of Durene* multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
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EXTRA SERVICE ---easy to wash
* Reg. U. S. Pat. Off. © 1944

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Durable finish that does not yellow whites or pastels.
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For rayon warp sizing and crepe soaking.
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Special sulfated refined vegetable oil. Dye assistant and finishing oil.
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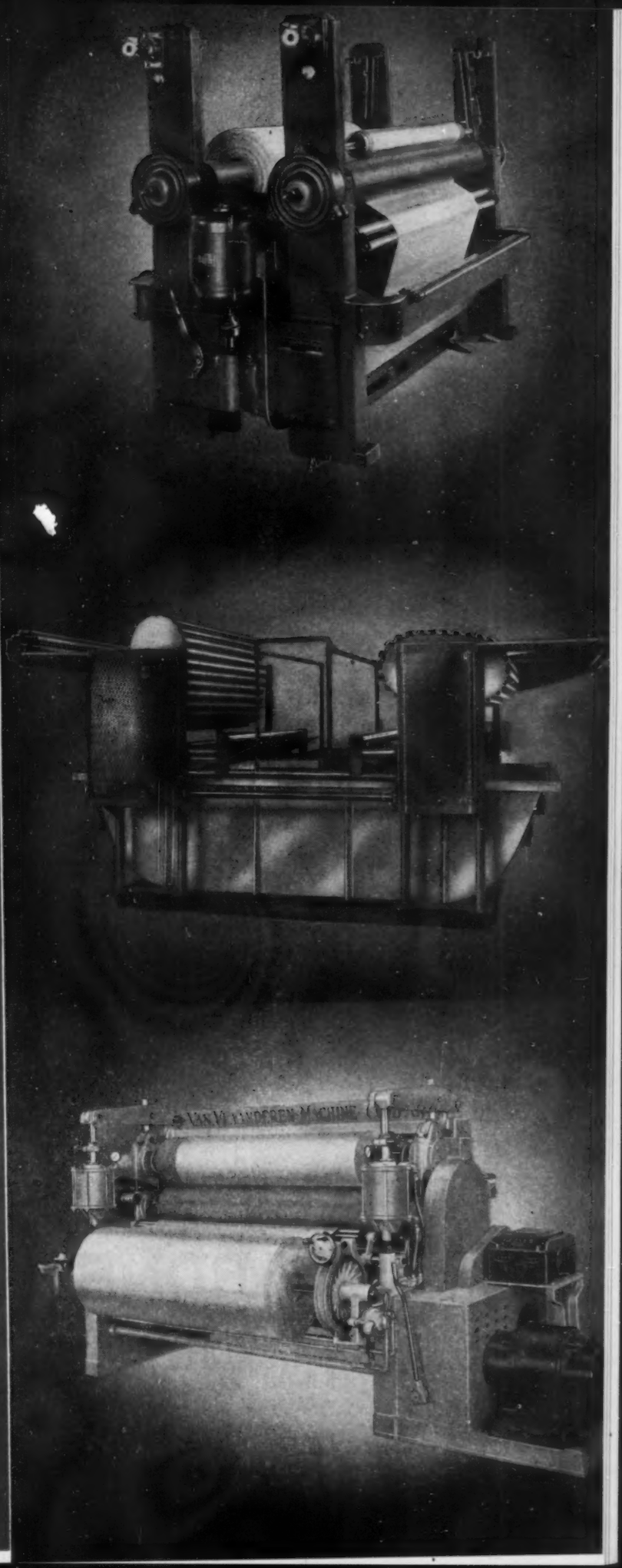
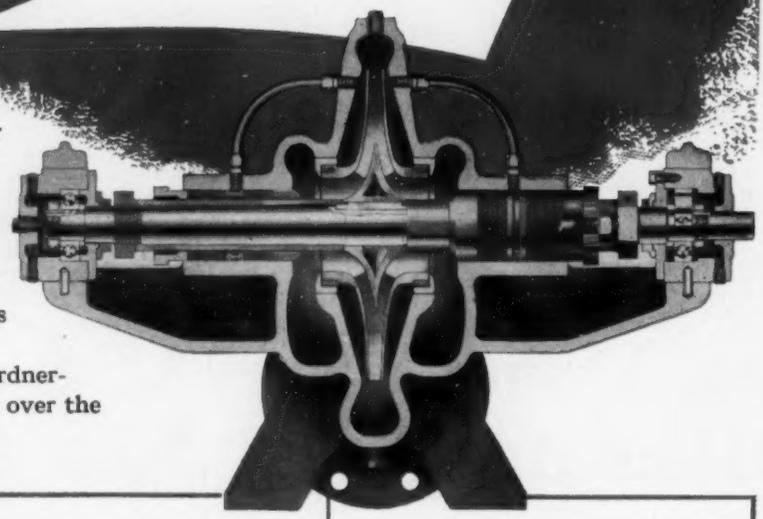
World's largest manufacturer of machinery for processing modern fabrics

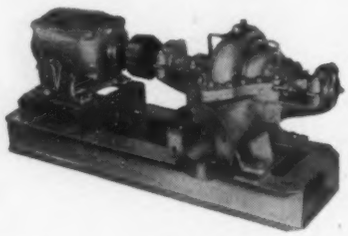


INSIDE Engineering makes the difference

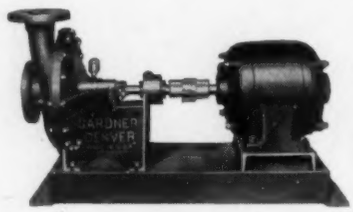
YOU can't judge a centrifugal pump from the *outside*. It's the inside that makes or mars the pump's efficiency. Inside, Gardner-Denver pumps are hydraulically and mechanically right. Foundry practices are rigidly controlled to form extremely smooth castings. Correctly proportioned water passages produce a uniform flow of water by eliminating eddies, backwaters and sudden changes in velocity.

Check over your pumps, then call a Gardner-Denver sales engineer—at your service all over the world—to help plan the correct pumping installation for you.

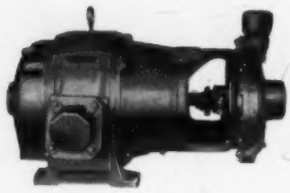




Gardner-Denver Horizontally Split-Case Double-Suction Centrifugals for large capacities. Available in sizes for all heads up to 300 feet.



Gardner-Denver Side-Suction Centrifugals for general utility service. Made in capacities up to 1600 gallons per minute at heads up to 100 ft.



Gardner-Denver Close-Coupled Centrifugals function in any position. Capacities up to 1250 gallons per minute at heads up to 250 ft.

For complete information, write Gardner-Denver Company, Quincy, Illinois

GARDNER-DENVER SINCE 1859

Atlanta, Ga.
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Boston, Mass.
Hazleton, Pa.
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BROACHING...

Turned roll pushed through broaching dies.

Produces Fluted Rolls with Closer Precision—and Cheaper, too

Fine finished rovings throughout the world depend on the quality of fluted rolls. Lapointe machines and Lapointe dies make possible mass production with extremely close tolerance and mirror-like finish of these important textile parts. A standard (and economical) horizontal push broaching machine pushes the turned rolls through the series of specially designed broaching dies. This method gives greater production and precision than any other. Write, wire or cable Lapointe, Dept. 51, today.

THE Lapointe MACHINE TOOL COMPANY

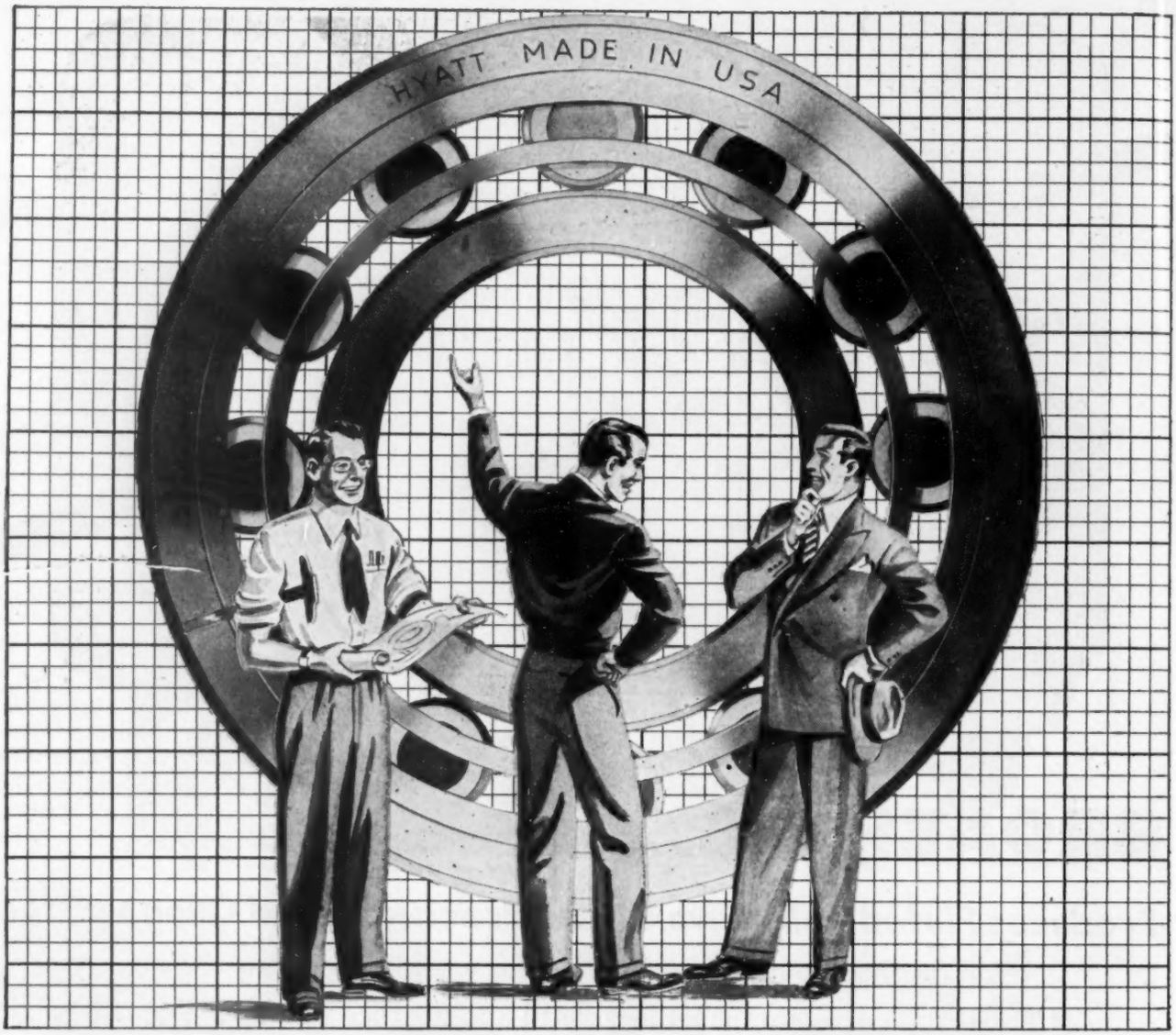
HUDSON LAPOINTE MASS.

Exclusive with Lapointe Electrolized Broaches.

HUDSON, MASSACHUSETTS • U. S. A.

Branch Factory • Edgware • Middlesex • England

THE WORLD'S OLDEST AND LARGEST MANUFACTURERS OF BROACHES AND BROACHING MACHINES



THEY ALL AGREE ON HYATTS

MACHINE DESIGNERS • MILL MEN • OPERATIVES

Because

Hyatts keep machinery in better adjustment—reduce maintenance—increase production and improve quality of yarn and fabric—need lubrication only a few times yearly—prevent spattering of lubricant on cloth—make the operatives' work easier—cut power costs as much as 15%.

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LOOMS • PREPARATORY EQUIPMENT • FINISHING MACHINERY

Write for the facts: Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

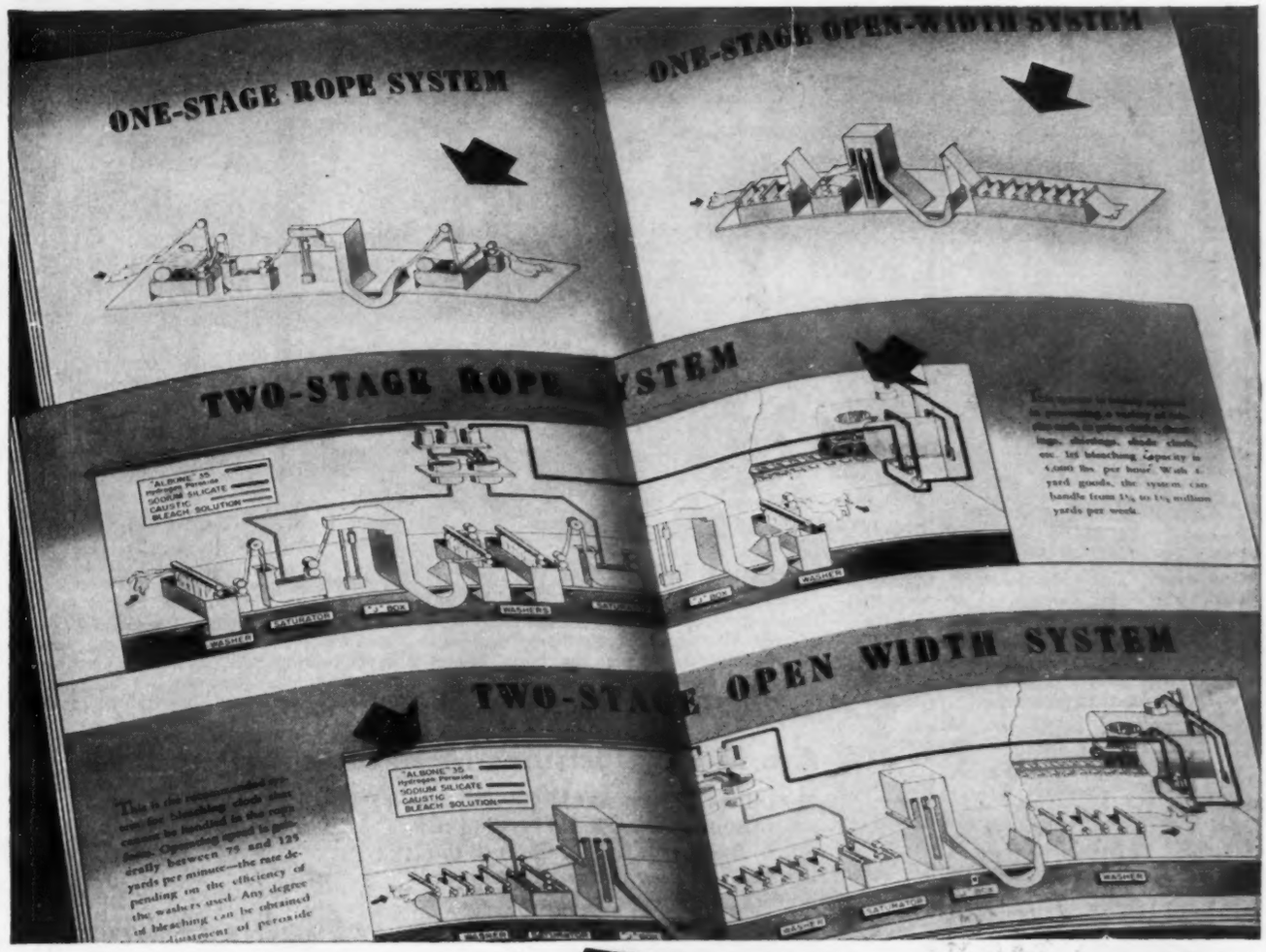
HYATT ROLLER BEARINGS

NEW BOOK

ILLUSTRATES DU PONT CONTINUOUS PEROXIDE BLEACH SYSTEMS

For Better, Faster Bleaching of Cotton Piece Goods at Lower Over-all Costs

Now is the time to improve your bleachery so that it will return the most in the way of fast production of quality goods at low cost. You can do it with one of the cost-saving, production-boosting Du Pont Continuous Bleaching Systems which can be specifically designed to meet your production requirements. Typical layouts and other information are given in this new book, copies of which can be obtained by writing or mailing the coupon below to E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.



E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department
Wilmington 98, Delaware

Please send my copy of "Du Pont Continuous Peroxide Bleaching Systems."

Name_____

Firm_____ Position_____

Address_____

DU PONT CONTINUOUS PEROXIDE BLEACHING

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DUPONT

"Which Squirrel-Cage Motor Shall I Buy?"

Open-Type? This general-purpose squirrel-cage motor meets about 9 out of every 10 application requirements; so chances are it's the design you'll select. Allis-Chalmers builds generously proportioned, rugged *open-type* squirrel-cage motors in sizes from 1 hp to the largest practical requirement.

Splash-Proof? Where operating conditions are conducive to entrance of particles or liquids into ordinary motors from either top or sides, Allis-Chalmers *splash-proof* squirrel-cage motors may be your best buy. They're designed to *exclude* top or side directed particles and liquids. Sizes 1 hp to the largest.

Vertical? or Flange-Type? *Either* can solve a space problem. *Vertical* motors (sizes 1 hp to largest) for vertical drives. *Flange-mounted* for side or angle drives. In both types bearings and closures are designed to prevent grease escapement. Mounting flange for attaching to your base can be provided.

Totally-Enclosed? Explosion-Proof? Completely weather-proof and fan-cooled, these motors are built to beat abrasive dust, dirt and corrosive fumes, or moisture conditions that cause windings in ordinary motors to deteriorate. *Explosion-proof type* for oil refineries, paint, varnish or lacquer plants, etc.; Underwriters approved; reduce hazards in explosive or dust atmospheres. Either type built from 1 hp and up.

Are Motor Decisions More Important Today?

YOU BET THEY ARE! One *obvious* reason is the need for keeping costs down. Another is that in the rush to fill demand much equipment is being misapplied; making it harder to maintain profits not alone today, but tomorrow, the next day and the next year—as long as misapplication continues!

That's why it's important to take a good look at motors — their characteristics — your equipment — power source and surroundings — *before* you buy and apply! If you're in doubt, don't take chances — call a motor expert! ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2327

A CENTURY OF SERVICE to Industry THAT MADE America Great

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One of the Big 3 in Electric Power Equipment-
Biggest of All in Range of Industrial Products

Free to you from Glidden Experts!

Today's First and Finest COLOR SERVICE ...Tailor-made FOR YOUR PLANT

Since establishing the paint industry's first laboratory devoted exclusively to research on functional color way back in 1930, Glidden has been perfecting today's finest color service. For *this* service is more than printed guides to general principles—it offers in beautiful, easy-to-follow room elevations complete color prescriptions, based on a study of your individual plant and your individual lighting problems.

With this Sight Perfection Color Service and Glidden SPRAY-DAY-LITE, America's fastest-selling interior maintenance paint, you can make your next painting pay tremendous dividends. Companies in practically every industry who have used this free service during the past 18 years have reported increased production resulting from improved seeing conditions and safer, pleasanter working conditions. The coupon below will bring you more facts on today's first and finest color service—and the reasons why more gallons of SPRAY-DAY-LITE are used in the nation than any other finish of its kind. Mail it today!

THE GLIDDEN COMPANY, Dept. WW-3
11001 Madison Ave., Cleveland 2, Ohio

☐ Please send literature to indicate the practical and thorough nature of the *Sight Perfection* painting program you will design especially for us.

☐ You may have your representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

NAME .....

COMPANY .....TITLE.....

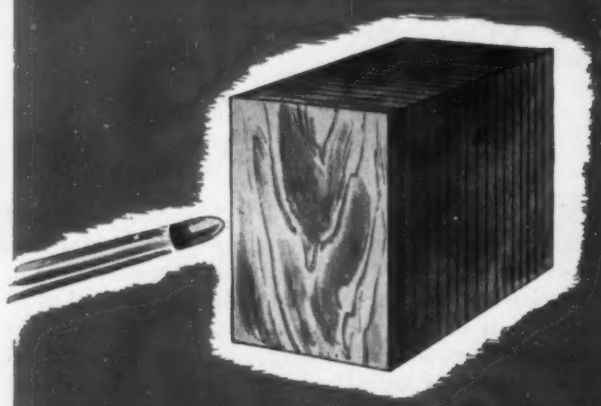
ADDRESS.....

CITY, ZONE, STATE.....

Glidden

Pacemaker in Paints

STOP



It takes seventeen ¾" pine boards at 600 yards to stop a .30 caliber army rifle bullet. The boards must overcome the force—inertia force—of the high-speed bullet.

START

Jato—Jet Assisted Take-off—is plane designers' newest way to beat inertia and gravity in lifting heavy planes off the ground. Once aloft, planes need less power to stay aloft. Stopping or starting, inertia must be overcome.

Equipment Builders:

Write for free copy of "Magnesium in the Textile Industry". Tells all about weight, corrosion-resistance and production advantages offered by American Magnesium.

MORAL: In equipment that travels at high speed, reverses direction and again travels at high speed, you can save a lot of power and a lot of wear by using moving parts of American Magnesium. 35% lighter than aluminum, 75% lighter than steel, it's corrosion-resistant, non-warping. Ask your machinery builder to use it wherever he can to save power, reduce vibration, keep machinery running longer with less time down for repairs.

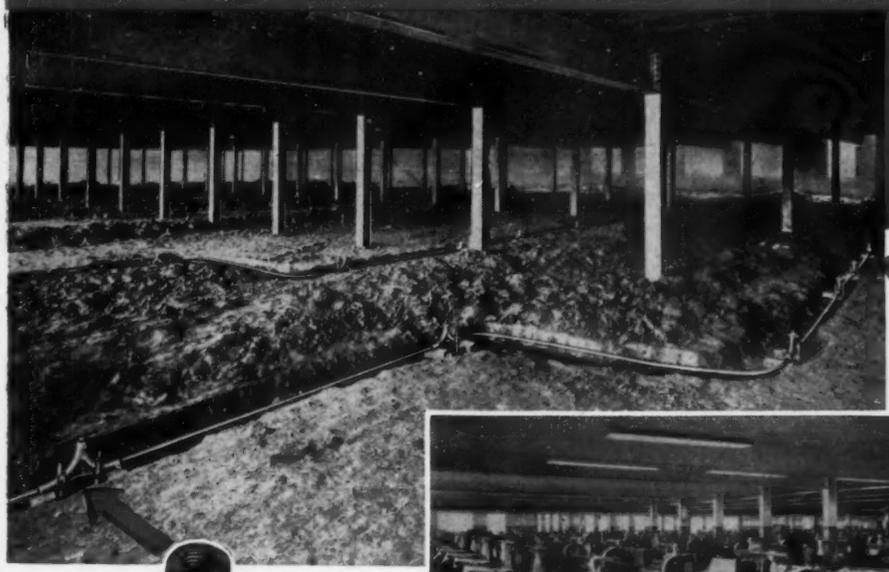
ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium Products, 1704 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.

MAGNESIUM MAZLO Reg. U.S. Pat. Off. PRODUCTS

AMERICAN MAGNESIUM CORPORATION

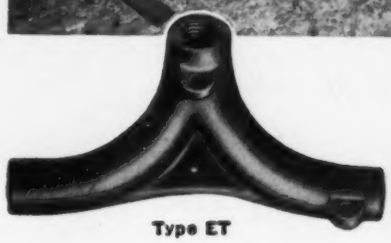
SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

CROUSE-HINDS Large Radius Tees and Elbows . .



An electrical conduit installation using Crouse-Hinds Large Radius Type ET Tees in a mill before the concrete floor has been poured.

The same mill completed.



Type ET

Type ELB

Type EY

*CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

. . . simplify electrical conduit installation in concrete floors

Where electrical conduit is concealed the use of Crouse-Hinds Cast-Feraloy Large Radius Tees and Elbows results in substantial savings in installation and in maintenance.

Saves Material. These *CONDULETS eliminate the necessity for flush floor boxes.

Easy To Wire. The wires can be brought directly up to junction CONDULETS or motor controllers, where it is easy to make the necessary taps and splices.

Maintenance Reduced. Taps and splices are out of reach of oil, water, or cleaning solutions that may be on the floor, completely eliminating future difficulties from this cause. If necessary, any portion of the sectionalized circuit between two tees can be readily replaced.

Crouse-Hinds Large Radius Tees and Elbows are equally useful for ceiling and sidewall outlets. These CONDULETS are made of cast Feraloy, which is inherently corrosion-resistant. The hubs have the CONDULET features of tapered threads and integral bushings, designed for easy fishing. Lugs are provided for anchoring to concrete forms.

These CONDULETS are listed on Page 14, Section 65, CONDULET Catalog 2500. The complete CONDULET line consists of thousands of items . . . . engineered to enable the electrician to do the job and do it right.

A Nationwide Distribution Through Electrical Wholesalers

CONDULETS
FLOODLIGHTS
TRAFFIC SIGNALS
AIRPORT LIGHTING

CROUSE-HINDS COMPANY
Syracuse 1, N. Y.

Offices: Birmingham – Boston – Buffalo – Chicago – Cincinnati – Cleveland – Dallas – Denver – Detroit – Houston – Indianapolis – Kansas City – Los Angeles – Milwaukee – Minneapolis – New York – Philadelphia – Pittsburgh – Portland, Ore. – San Francisco – Seattle – St. Louis – Washington. *Resident Representatives:* Albany – Atlanta – Charlotte – New Orleans – Richmond, Va.

CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT.

PYROTEX

SCOURING AGENT

PYROTEX is a most effective scouring agent having excellent wetting out properties which assure immediate scouring action.

PYROTEX can be used in scouring and dyeing of wool, worsted, rayon, acetate, cotton and nylon.

PYROTEX is not affected by acid, alkali, or hard water, and will not precipitate or form scum.

PYROTEX, being neutral, is very adaptable for dyeing of acetate and mixtures thereof.

PYROTEX can be used alone or with soap and alkalies. In scouring of woolens and worsteds for piece goods dyeing, it is extremely important that goods be thoroughly free from fats which may cause shaded or cloudy goods. However, this is not the case with PYROTEX. Even though not thoroughly washed out it will assist in dyeing.

STANDARD CHEMICAL PRODUCTS, Inc.

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Universally Used FLAT

QUALITY LOOM HARNESS EQUIPMENT

Ste-Hed-Co

STEEL HEDDLES

Mills all over the world today demand the flat steel heddle in order to obtain increased production — this up-to-date equipment meeting all loom conditions and warp fibres.

Firmer, more flexible and smoother—Flat Steel Heddles are replacing the old fashioned wire type with astonishing results.

Look for Quality—Production in this long-lasting Loom Harness Equipment giving efficiency and top-notch results. Made by the largest exclusive manufacturer of Loom Harness Equipment in the world with every known facility and resource at its command.

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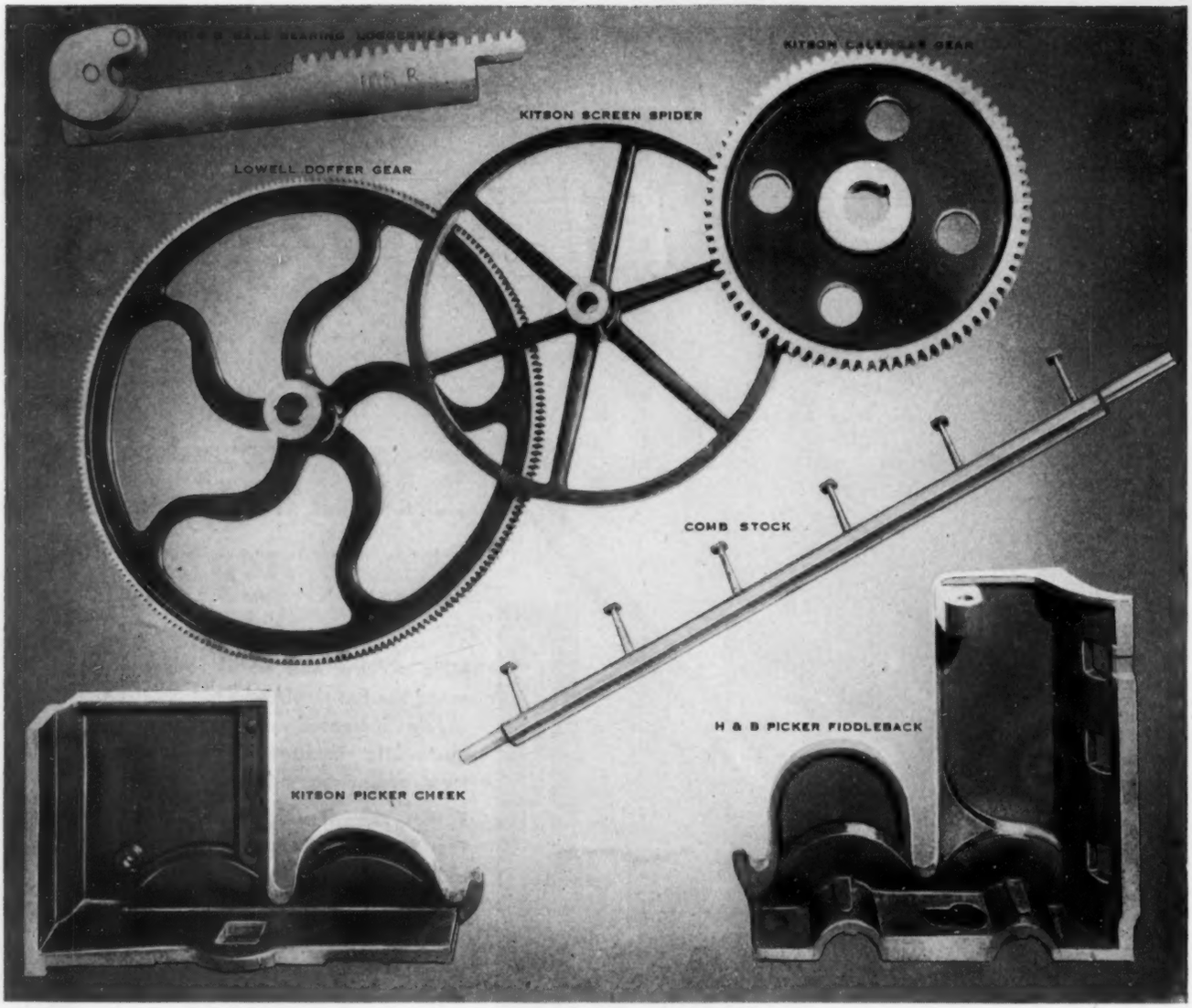


SCARCE ITEMS?

NOT WITH US!

We have built, specifically for stock, these and other hard-to-obtain card room parts, such as bobbin, spindle and coiler gears, plate gears, lickerin shrouds, and mote knives.

We can promise **quick delivery** on such items. Send us your order **today.** All orders will be handled the date they are received. Don't be late with yours!

Southern States Equipment Corp.
HOME OFFICE AND FACTORY — HAMPTON, GEORGIA

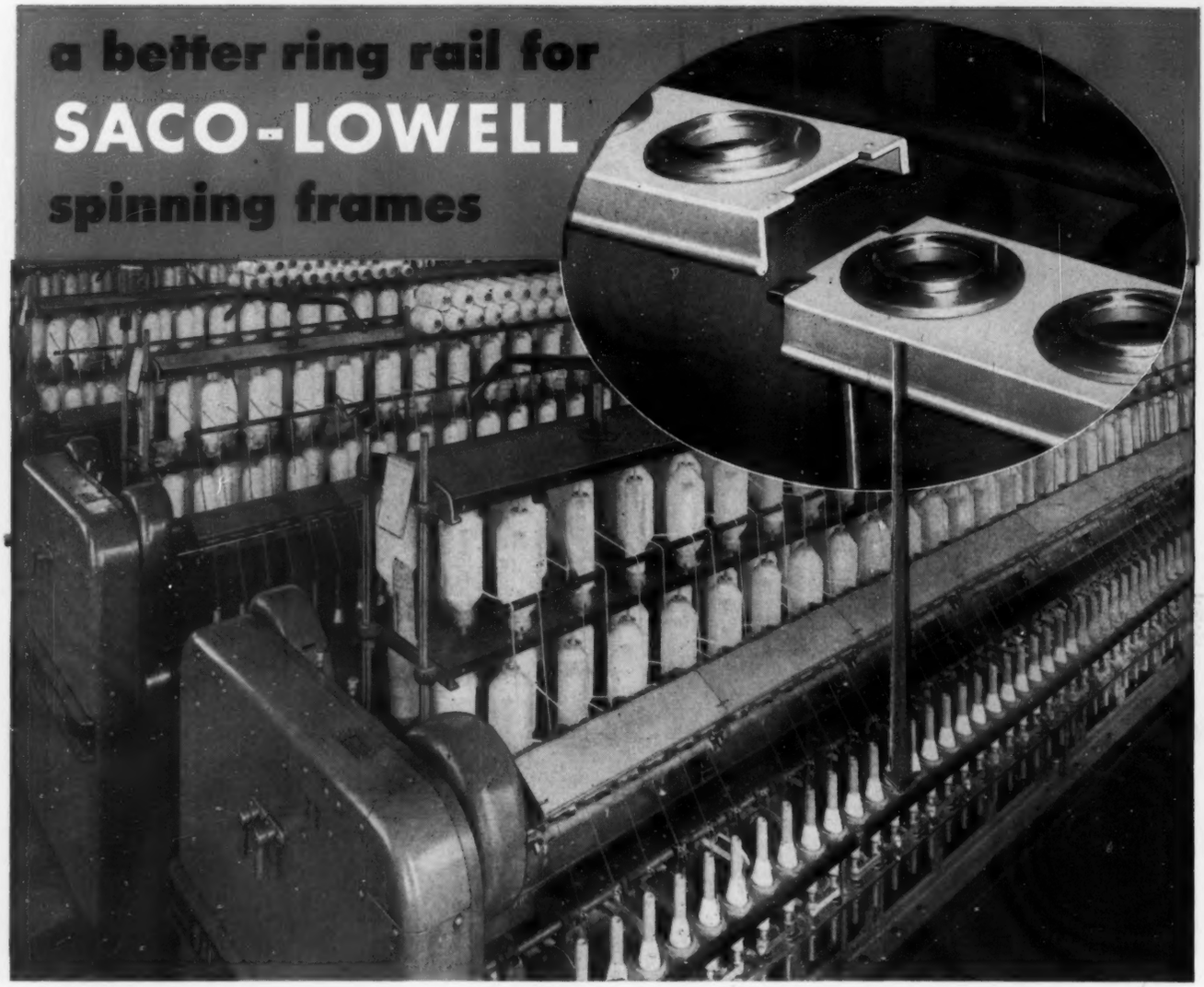
HENDERSON FOUNDRY & MACHINE COMPANY DIVISION
Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

RAPIDASE
for de-sizing

The dependable, rapid and economical de-sizing agent for cottons, rayons and mixed goods. Applicable over a wide range of processes, temperatures and speeds.

HAS PROVED PARTICULARLY SUITABLE FOR CONTINUOUS DE-SIZING

WALLERSTEIN COMPANY, INC. • 180 MADISON AVENUE • NEW YORK 16, N. Y.



Extruded from Aluminum for Lighter Weight and Better Balance

A LEADER never overlooks an opportunity to build greater value into his equipment. That's why modern cotton and rayon spinning frames built by Saco-Lowell Shops, Biddeford, Maine, now feature ring rails extruded from Reynolds Aluminum.

Advantages of these new ring rails are many. They are extruded to their final cross section, with thicknesses varied to provide maximum strength and stiffness. They are made of high-strength, heat-treated aluminum alloy.

Weight is but one-third of the steel ring rail formerly used. Result: smoother reciprocating motions, and, consequently, better bobbins.

There is little or no maintenance cost connected with aluminum. Under normal mill operating conditions its smooth finish is retained without the aid of "protective" coatings. Aluminum can't rust, and yarn won't stain from moisture condensation on aluminum.

For information on aluminum extrusions and for assistance in planning your product requirements, write our nearest field service office, or Industrial Machinery Division, Reynolds Metals Company, 310 Hanna Building, Cleveland 15, Ohio.

REYNOLDS METALS COMPANY, ALUMINUM DIVISION, LOUISVILLE, KENTUCKY

REYNOLDS *Lifetime* **ALUMINUM**

WRIGHT

SPEEDWAY

ELECTRIC HOIST

• Here's the first heavy-duty electric hoist in the light-duty field. Rugged. Powerful. Fast. Safe. Efficient. A streamlined package of power in capacities of 250 lbs. to 2000 lbs.—redesigned throughout to take over material handling problems where minutes mean money. Ask your Wright distributor. Or write us at York, Pa., for descriptive folder DH-1250.

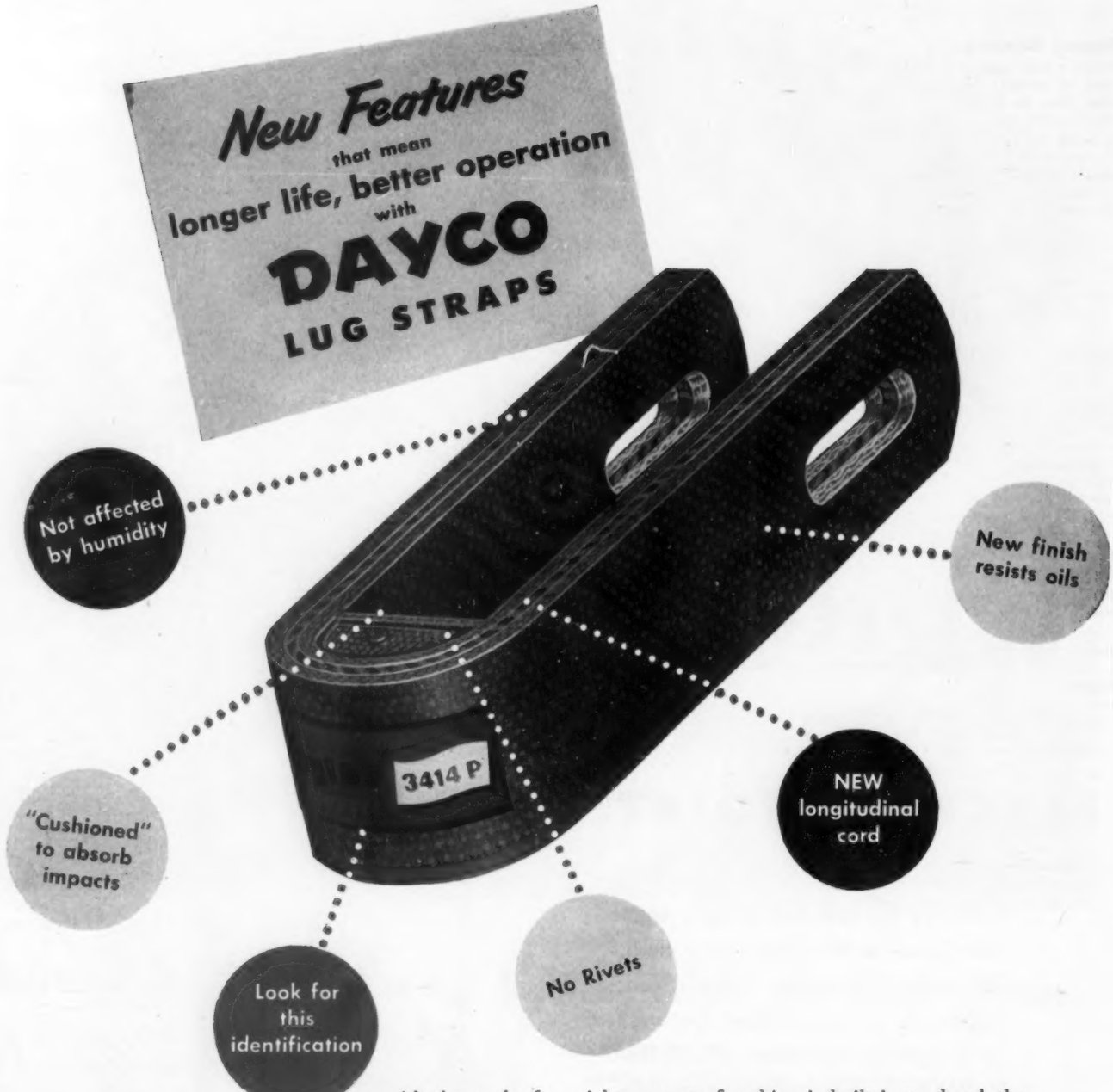
ACCO

York, Pa., Chicago, Denver, Los Angeles, San Francisco, Portland, New York, Bridgeport, Conn.

TRADE MARK

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety



...it's the mark of the new Dayton Thorobred Lug Strap *that outlasts three ordinary lug straps!* Built with a molded-in plug, all in one piece, Dayton Thorobred Lug Straps have no rivets, no parts to work loose. No adjustment is required during their long trouble-free life, thus service costs are cut to an absolute minimum.

In addition, Dayton builds a *special longitudinal cord* right into the center of the lug to provide added strength along the line of force. The exact right amount of cushion is built in to absorb the terrific thrusts of quick starts and stops to save wear and tear on the loom . . . to protect cam points and picker sticks. A few Dayton Thorobred Lug Straps tried on your looms will demonstrate that *they deliver the lowest cost per loom hour of operation.* For additional information, write The Dayton Rubber Company, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Building, Greenville, South Carolina.*

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

A Repeat Request

"About a year ago you were kind enough to send us several reprints of an article entitled 'How to Straighten Full-Fashioned Needles,' which appeared in the September 1946 issue of COTTON. This article has been very well received by some of our customers abroad and we would appreciate it if you will be so kind as to mail us an additional six copies."

H. PETERS

Alfred Hofmann, Inc.
West New York, N. J.

(Just a few left, but we'll service readers while the supply lasts.)

◆

Amateur Photography

"Textiles Review," published by Textiles, Inc., Gastonia, N. C., has announced a contest for amateur photographers. We're faced with a lot of competition on this one—some of the Photohints appearing in our discussion department were by amateurs. If the mill pics will help another fellow to run his job, send 'em in with a caption. We promise not to put you in another income tax bracket with payments for the photos.

◆

Morale Booster

"We want to express our appreciation of the help TEXTILE INDUSTRIES gives . . . industry . . . articles very helpful."

JAMES L. TURNER

Manager
Dominion Fabrics, Ltd.
Welland, Canada.

(Out of a clear sky, too. Many thanks for the boost in morale.)

◆

Reprints and Response

When we publish a story, we think it's valuable enough for you to read. When three associations serving the textile industry ask for reprints of a story to distribute to their members, brother, that's something—and when readers from all over the country comment on it, we feel our efforts have been worthwhile. That's what happened on the December article "Employee Publications, A sound investment, or a total loss?" Credit Messrs. Schenck and Matthews of Riegel for the story.

◆

See You There

About the time this issue reaches you the convention season will be under way. For your convenience we are giving the dates on this page. Conventionaires of long standing are readying themselves; vigorous convention-training programs have been adopted, letters to wives for weeks ahead have been written and signed. We'll see you there.

◆

Seydel Articles

Many requests are coming to us for reprints of the Seydel articles on "Cotton Warp Sizing." Reprints of indivdual articles are not being made, but the entire series will be placed in book form some time this summer, when the series will end. Send your requests to the editors, and your name will be placed on the list.

◆

Thanks

". . . everybody is not a snake, however, you are still left."

NAME WITHHELD

(This must be a strictly personal opinion. But we're withholding the name before someone proves to this guy that we are snakes.)

SHORTS and REMNANTS

By M. L. D.

Balloon Control

"Please furnish me with tear sheets of 'Balloon Control' from July 1947 issue."

J. P. ELLIS

Blacksburg, Va.

(This one was misinterpreted by our son, age nine, who thought someone had learned to make balloons behave.)

◆

Maintain Testing Equipment

"We have been advised by the Textile Research Institute, Inc., that you may possibly be able to furnish us with a copy of the article by Horace L. Pratt entitled 'Maintain Testing Equipment!'"

N. M. LILLIE

The Drackett Co.
Cincinnati, Ohio

◆

A Limited Number Still Available

"We note that there are a number of reprints available for the 'Preventive Maintenance Program at Dan River Mills,' five parts, which were published in April, May, June, July, September, 1946. Would you please forward to us at your convenience a complete set of these reprints."

R. G. JAMIESON

Manager
Canadian Cottons, Ltd.
Marysville, N. B., Canada

◆

Also From Canada

"Will you please send us a reprint copy of the following article, if copies are available: 'Everglaze' from the March. 1947, issue?"

PAULINE MORRISON

Librarian
Canadian Industries, Ltd.
Montreal, Canada

March 20—Spring meeting, Textile Operating Executives of Georgia, Georgia School of Technology, Atlanta, Ga.

April 2-3—Annual Convention, Alabama Cotton Manufacturers Association, Hotel Buena Vista, Biloxi, Miss.

April 3—South Carolina Division, Southern Textile Association, Parker High School, Greenville, S. C.

April 3—Piedmont Section, AATCC, Robert E. Lee Hotel, Winston-Salem, N. C.

April 5-8—Southern Machinery and Metals Exposition, Municipal Auditorium, Atlanta, Ga.

April 10—Piedmont Division, STA (includes former Gaston County Division), Charlotte, N. C.

April 17—Northern North Carolina-Virginia Division, STA, site of meeting to be announced.

April 19-20—Hosiery Industry Conference and annual meeting of NAHM, Claridge Hotel, Atlantic City, N. J.

April 22-24—Annual meeting of American Cotton Manufacturers Association, Roosevelt Hotel, New Orleans, La.

April 24—Eastern Carolina Division, STA, N. C. State College School of Textiles, Raleigh, N. C.

May 3-7—International Exposition of Textile Machinery, Equipment and Supplies, 71st Regiment Armory, 34th Street at Park Avenue, New York City.

May 5-7—Annual convention, Cotton Manufacturers Association of Georgia, Sheraton-Plaza Hotel, Daytona Beach, Fla.

May 10-14—Third annual National Textile Seminar, Shawnee Inn, Shawnee-on-the-Delaware, Pa.

May 13-15—Annual convention, Southern Textile Association, Ocean Forest Hotel, Myrtle Beach, S. C.

May 27-29—Annual convention, Tufted Textile Manufacturers Association, Sheraton-Plaza Hotel, Daytona Beach, Fla.

June 18—Piedmont Section, AATCC, Ocean Forest Hotel, Myrtle Beach, S. C.

Oct. 4-9—15th Southern Textile Exhibition, Textile Hall, Greenville, S. C.

Oct. 20-23—Annual convention, American Association of Textile Chemists and Colorists, Sheraton-Bon Air Hotel, Augusta, Ga.

isn't that the Mathieson Plant?

"It's one of them, Mr. Jones—the Niagara Falls plant."

Yes, Mr. Jones and there's another at Saltville, Va., to serve the southeast, and a third at Lake Charles, La., serving the southwest. With three plants, Mathieson offers triple flexibility in deliveries of caustic soda. Call it three sources of supply. That's why weather, breakdowns, railroad or labor conditions seldom keep Mathieson from making prompt deliveries.

The Mathieson Alkali Works (Inc.), 60 East 42nd Street, New York 17, N. Y.

Caustic Soda...Soda Ash...Bicarbonate of Soda...Liquid Chlorine...Chlorine Dioxide Ammonia, Anhydrous & Aqua...HTH Products...Dry Ice...Carbonic Gas...Sodium Chlorite Products...Sodium Methylate.

Mathieson
CHEMICALS

Textile Industries
COTTON
MARCH
1948

Destructive Taxation

IT IS an accepted adage that "the power to tax is the power to destroy," and in their eagerness to *collect* revenue, governments are prone to impose taxes that *destroy* revenue and work dangerous and ruinous changes in the economic and political structures of a country.

The general trend of taxation in this country for several years has tended toward the destruction of small businesses and the enlargement of big ones. A continuation of our present tax policies should in another generation or so create a greater number of huge corporations, with a correspondingly diminishing number of small, vigorous, independent businesses. Occasionally, some Senator or Congressman rises to point out the destructive effect of confiscatory taxes on growing enterprises, but his voice is usually drowned in the clamor for more revenue demanded by increasing numbers of government activities, and those who enact our tax laws find it expedient to be governed by the cynical policy of the statesman who remarked that in levying taxes it was desirable to pluck the goose which squawked the least.

It is much easier for our government to levy confiscatory taxes on the enterprise of the small number of persons who possess real capacity for the production of wealth, than to spread these levies over a great number of persons who may express their displeasure in no uncertain terms at election time. It is easier to destroy a promising and growing business by taxing it to death than it is to get the same amount of money from a large number of resentful individuals.

That it is simply kidding the public to levy confiscatory taxes does not seem to disturb the august minds of those who levy the taxes, nor does the fact disturb them that the confiscation of the substance of thousands of growing businesses may so stunt them that they can never have healthy development into the larger businesses which are so necessary to the economic welfare of the country.

The present economic supremacy of this country is traceable almost entirely to our system of free enterprise, which fostered to the utmost the growth of those businesses which had the capacity for growth. We have frequently remarked that the big businesses of today are the little businesses of yesterday or day before yesterday. If the little businesses of today are to be bled to death by repressive taxation, we can confidently expect in a generation or two to find practically all business conducted by a relatively small number of vast corporations.

The general trend of taxation in this country has for several years tended toward the destruction of small businesses and enlargement of big ones.

The freedoms guaranteed by our constitution are not automatic. They have to be constantly cherished and protected by our citizens. That our system has lasted as long as it has when other attempts at similar systems have failed may be attributable chiefly to the fact that in this country we had so many freeholders who cherished and protected the precious privileges made possible by our form of government.

In the transition from popular government to tyranny and from freedom to bondage, the first and most important step is the elimination of the small freeholder and the accumulation of power into a few easily controlled reservoirs. In Germany, where cartelization was an old story and there were unusually large accumulations of industrial and economic power, Hitler found it a relatively simple matter to take over that power. It will be little different in this country when, and if, practically all industrial activity is controlled by a small number of enormous corporations. The interest of the people in protecting their liberties will diminish as their individual economic strength diminishes.

The man who owns a small, prosperous business will vigorously oppose any tyrannical encroachments on his rights in that business, but the same man, after selling his business to a big cor-

poration, might very complacently regard governmental encroachment on these same rights as applying to the big concern.

We have in mind a gentleman in New York who has built up a nice business by hard and unremitting toil and the exercise of some rather unusual talents over a period of years. It is a business which has grown steadily in the face of tremendous difficulties, and a business which should continue to grow steadily. This gentleman recently remarked that he was planning to sell his business to a large competitive corporation. He said that taxation was making it almost necessary for him to dispose of the business.

The big corporation had offered him a very attractive price for this business, and had agreed to give him a contract to remain with them to manage it at a handsome salary for a stipulated number of years. This proposition looked very attractive to this gentleman because under our present tax laws, any profit which he might make through the sale of his business would be lightly taxed, but any profit that he made through the operation of the business was taxed at a confiscatory rate, so that there was not enough to plow back into the business to assure its proper growth.

In this case, the big corporation, if in need of additional financing, could go to the public with a stock issue or could borrow money on long-term bonds bearing a low rate of interest. The small business man had no such access to financial support. The one advantage that he had over the big corporation—his own creative ability—was nullified by prohibitive taxation. His ability to make an unusual profit through the exercise of unusual industry, thrift, intelligence and capability, was brought to naught through the confiscation by taxes of what he created.

Generally speaking, the only way a little business can grow is by making more money on the same operations than a big business could make, and plowing the profit back into the business. Except in a business inherently requiring a tremendous investment of capital, a smartly operated little business can always manufacture or sell more cheaply than a smartly operated big business. It would be a very rare thing to find every department of a big business as shrewdly and capably managed as a small business in the hands of a really good man. These little businesses under capable management would normally grow into larger businesses capable of greater service to their communities and to the nation, but we are now trying to nip them off through taxation as rapidly as they begin to achieve any worthwhile development.

Where a small business is not incorporated, the taxes soon become utterly ruinous and force the man who would otherwise prefer to operate as an individual or in a partnership, to incorporate in self-defense. This incorporation is then looked upon by the taxing powers as a deliberate attempt to evade taxes, which in a way it is, so the taxing powers demand that the corporation pay out as dividends the surplus earnings which ought to be returned to the business. If the corporation has to pay out its surplus as dividends, the inhuman surtaxes imposed by our present tax schedule confiscate the money just the same.

The textile industry has been an outstanding example of free enterprise as practiced by the little man or relatively little man.

It is extremely doubtful if taxes in general can, or should be, reduced at this time, but they are grievously in need of readjustment. Any honest tax should be so levied that it takes a fair and reasonable proportion of an individual's income, and takes it in such fashion that he knows definitely what proportion of his income goes as taxes. Taxes are now levied in very deceitful forms, so that while the ultimate consumer pays the tax just the same, he is unaware of it.

The man who makes $2500 a year and has enough dependents to make it unnecessary to file an income tax return is likely to think that he pays no taxes, and it is almost certain that he does not realize that perhaps 20 per cent of his entire income is actually going to pay the taxes the government collected from somebody else.

This vicarious taxpayer will scream about the high cost of living and cry out for more wages—to push the cost of living still higher—and he may never understand that perhaps 20 or 25 per cent of his cost of living is taxes, and he will be constantly clamoring for more government help in this, that, or the other direction under the absurd delusion that somebody else is paying for what he gets.

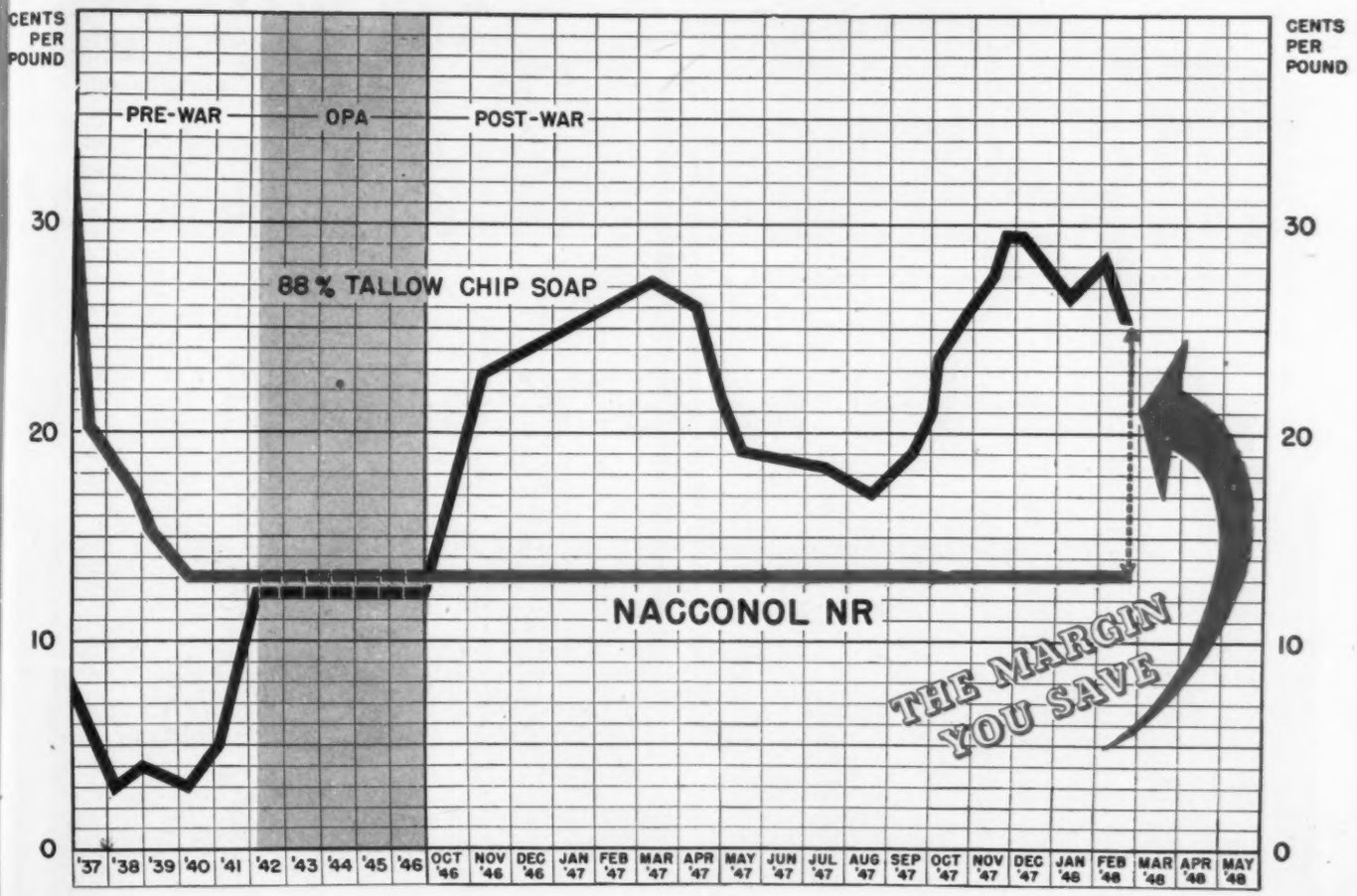
The consumer pays nearly all of the tax anyway, no matter how the tax happens to be levied. Abnormal and unreasonable taxing of individuals and corporations making money merely leads to the inflation of their incomes in an attempt to recoup losses through taxation. As we pointed out last month, a corporation wishing to give its executives a 10 per cent increase in salary may have to actually increase the salaries 50 to 100 per cent, and this excess increase is of course immediately passed on to the consumer as higher prices, and the chances are that the poor consumer never has the slightest inkling of the fact that the increase in prices is wholly due to taxation.

The textile industry is one of the last great strongholds of the small freeholder in business. Three companies make about 90 per cent of our automobiles: three companies make about 90 per cent of our motors; four companies make about 90 per cent of the tires; two companies make practically all of the steam locomotives, and in many other branches of industry three or four gigantic corporations control practically everything.

The textile industry has been an outstanding example of free enterprise as practiced by the little man, or the relatively little man. We hope this continues to be the case, but national taxation policies are certainly against it.

Pictures Speak Louder Than Words

COST COMPARISON - NACCONOL NR vs SOAP


CENTS PER POUND
PRE-WAR
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88% TALLOW CHIP SOAP
NACCONOL NR
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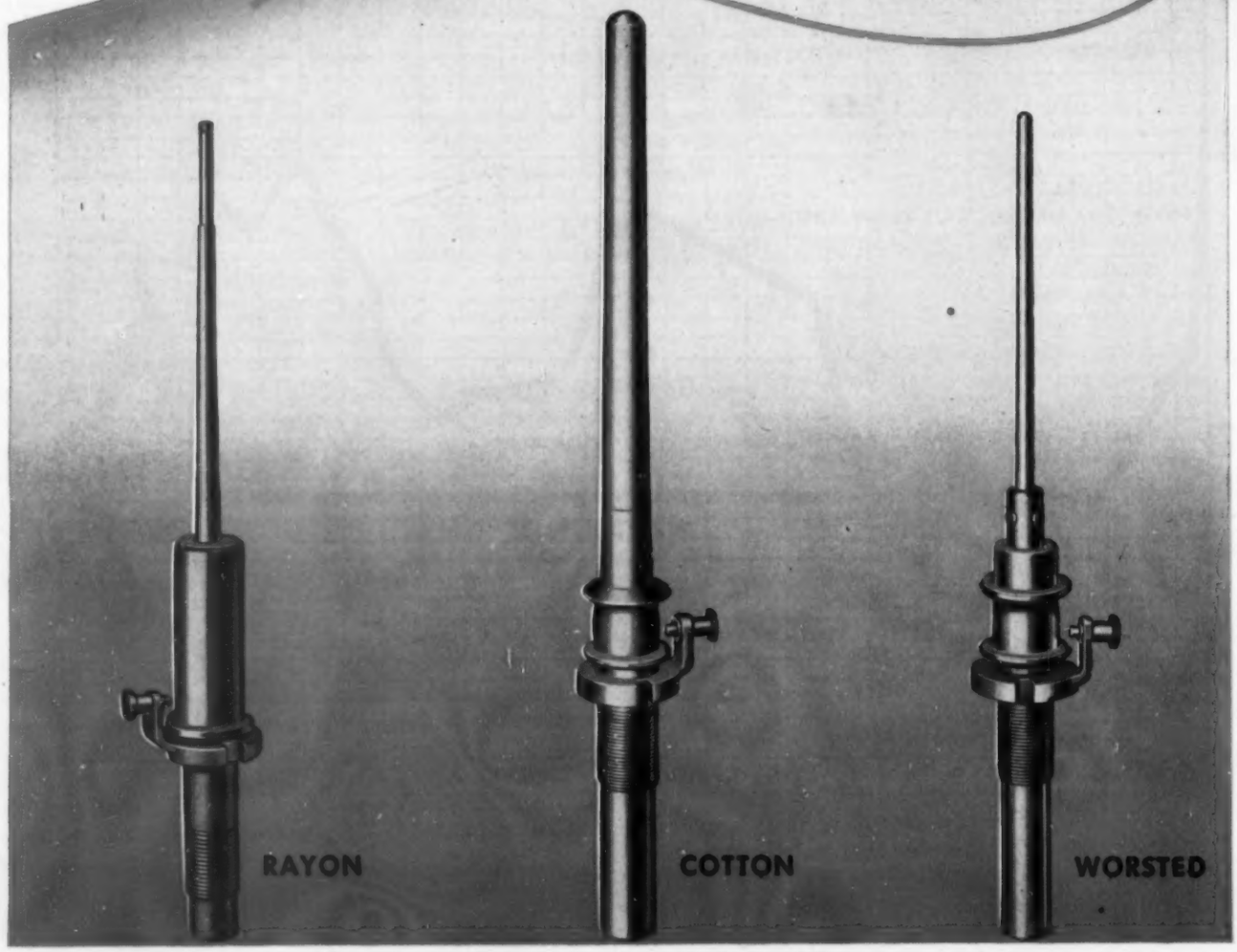

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Scene in a central supply room *before* reorganization.

Same room *after* basic storage principles were adopted.

Supply Control System

By R. M. ASHNER
P. O. M. Company

CONTROL of supplies can reduce excessive inventories of supply parts, reduce the amount of time lost by fixers in withdrawing needed parts, and reduce the number of daily purchase orders. Organization of the central supply room and substores is described.

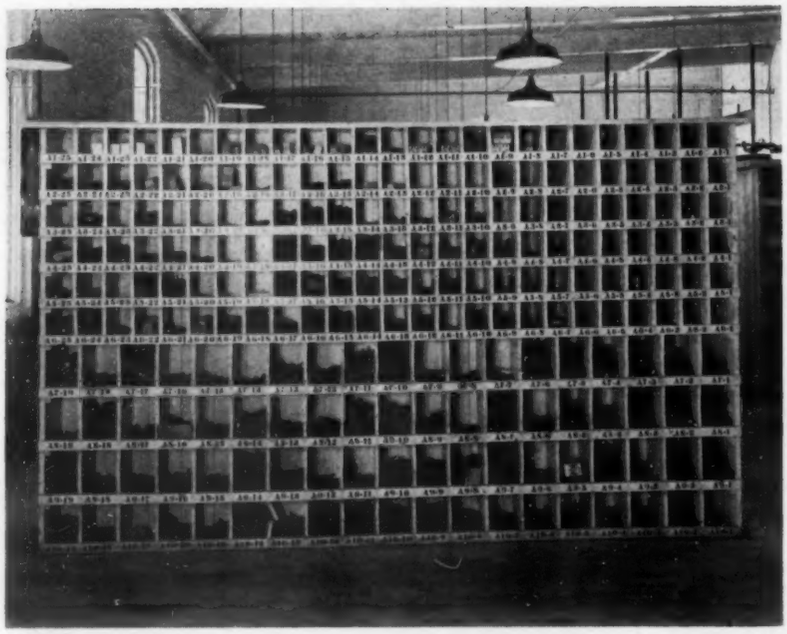
WITH ECONOMIES in mill operations becoming more and more important, thoughtful textile men will do well to give the problem of control for supplies their closest attention. To start with, it may be well to define what we understand by the term "supplies." Supplies are all items which do not appear in the finished product. Examples are: Machinery parts, tools, lubricants, chalk, brooms, etc. Therefore, all raw materials such as cotton, purchased yarn, etc., do not come under our definition of supplies. Dyestuffs, packaging, and mercerizing materials, etc., are not included as supplies by this definition, although in some mills they are considered so.

In the course of surveying many textile mills, we have found three basic reasons for excessive costs for supplies and supply controls:

1. Excessive inventories of supplies. Very often these inventories are kept in places where they deteriorate quickly and in such a manner that no one actually knows what is on hand. This condition frequently results in the purchase of items which are already somewhere in the mill.

To illustrate this point further, it is worth mentioning that there are a few mills where the cost of supplies is running as high as ten cents per pound of grey goods manufactured. This admittedly is the exception. But quite a number of mills do show supply costs of 6 to 7 cents per pound. In comparing this figure with the total labor costs of no more than 15-18 cents per pound in some types of well-run mills, for instance, one realizes the importance of a supply control system and sees it in its proper perspective.

2. Excessive amount of time is lost in procuring supply items and parts. This condition prevails all too often because the loom fixer has to lose up to 20 minutes of his time in order to walk to the supply room, wait for the supply clerk, obtain the parts requested, and return to the weave room. In addition to the fixer's time, which today is more expensive than ever, the store keeper is also losing time in locating the parts, and of course the machine to be fixed is frequently out of operation for an



"Shelves should be so constructed that small items are in the center of the cabinet, approximately three feet from the floor."

unduly long period of time.

3. Excessive amount of red tape is evident in many mills, resulting in unnecessarily high cost for administrative personnel. Red tape is due to the fact that supply parts are withdrawn singly by the fixer from the supply room, and that purchase orders are made out for small quantities.

Analysis shows that the cost of handling purchase orders in some mills is as high as $3.00 per order. On the other hand, by consolidating withdrawal procedures and purchase orders some mills were able to reduce the number of daily purchase orders from 100 to 30, or the number of deliveries by the supply room from 900 per day to 100. It becomes obvious then that in reducing the number of operations, the amount of paper work can be cut sharply. By eliminating duplications of records, and simplifying them, great economies in administration can be effected.

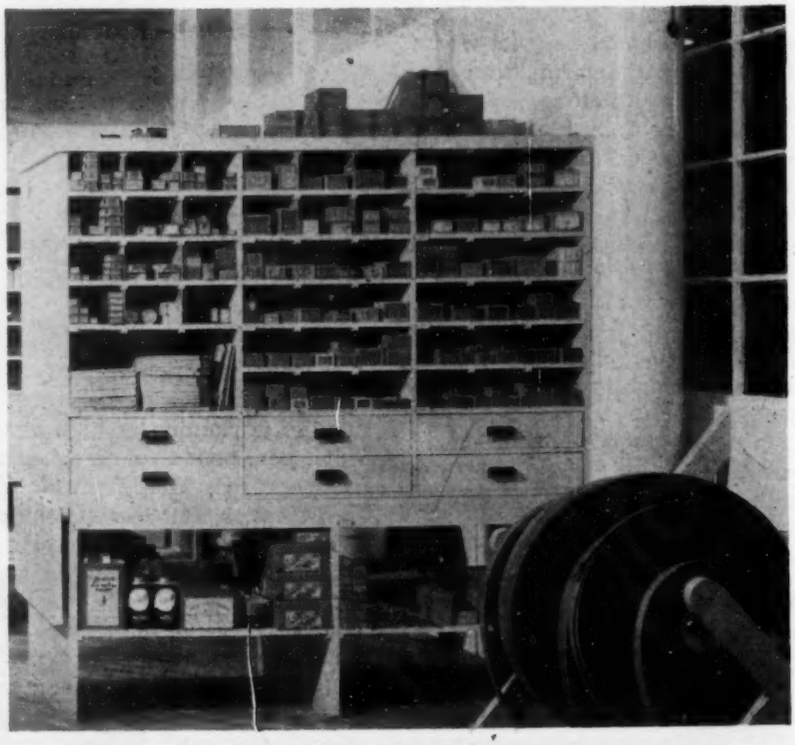
In citing a typical example, it will presently be shown how costs of supplies, time spent for withdrawal of supplies, and cost of administrative routines can be reduced. It must be emphasized, however, a formula cannot be presented which is applicable to every mill supply problem, because conditions vary a great deal from mill to mill.

Undoubtedly, the ideal set-up would be to have all receiving, storing, and controlling of supplies handled in one central mill location. This space would be conveniently located in relation to existing loading and unloading facilities, close to the main elevator, and possibly near the weave room, which is an important consumption place. However, it must be realized that this ideal can almost never be obtained without forcing some fixers to walk great distances. To overcome this disadvantage and yet retain centralized controls, it has been found practical to set up central stores wherever convenient from the receiving point of view.

In addition, substores should be established inside the various departments in sufficient numbers to permit all fixers to be not farther than approximately 100 feet from the substores containing the great majority of items required for their work. These substores need not be too large since they consist only of a few shelves equipped with locks to prevent access by unauthorized personnel. Space required for them can usually be found in certain corners and alleys.

The substores are maintained on a standard inventory basis by the central stores, necessitating no additional personnel, and yet providing full control of supplies, inventory, and consumption. The fixers can withdraw supplies on a

Size of the pigeon holes can be adjustable. Note facilities for enlarging or decreasing size of pigeon holes.



self-service basis, checking off on the bin cards the number of items withdrawn. This is explained in greater detail further on.

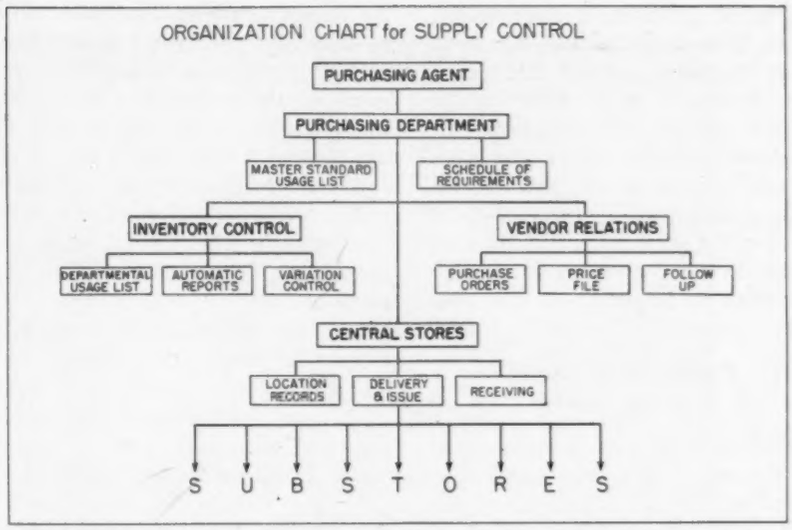
Central Supply Room

In regard to the layout of the central supply room, it should be stated in principle that all shelves must be easily accessible and storage arranged in such a manner that the most frequently required items are as near the center of activity as possible. Shelves should be so constructed that small items are in the center of the cabinet, approximately three feet from the floor so that they can easily be seen by the supply room clerk. The size of the pigeon holes can be adjustable so that the variations in storage requirements can be taken care of without upsetting the storage order.

Administrative Principles

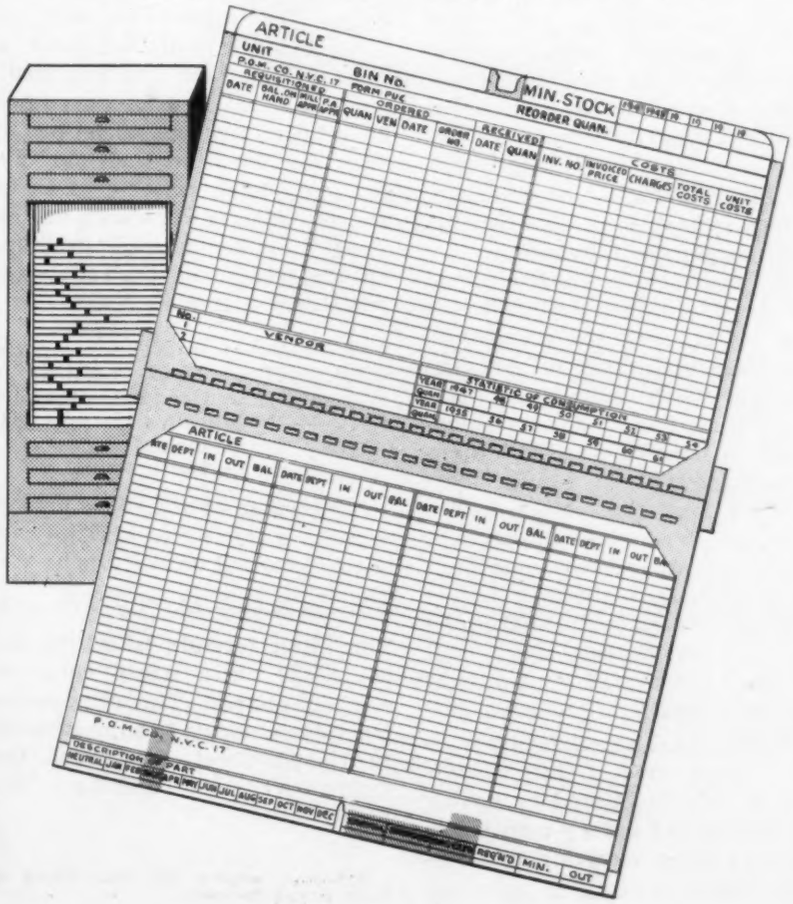
There are two basic principles underlying the overall organization of supply administration:

1. Establishment of one central agency (usually the purchasing department) which will be in charge of supply control and administration.
2. Introduction of standards for supplies. These standards will be a yardstick to ascertain whether supply consumption remains within predetermined limits. At the same time, these standards will serve as an instrument which indicates when and to what extent supplies have to be replenished. A typical organization chart for supply control is shown in the accompanying illustration.



Typical organization for supply control, as described by the author.

Visible stock and purchase index cards help to control the dollar investments in inventories. Conditions can be seen at a glance through a system of titles and flag inserts on the cards.



Visible Inventory Card

The purchasing department can accurately control the dollar investments in inventories by means of stock and purchase index cards enclosed in a visible file card pocket. One type of visible file is illustrated herewith. The stock record gives current information for each item in inventory, and conditions can be seen at a glance through a system of titles and flag inserts in the visible margins on the bottom of each card. The body of the stock record shows receipts, disbursements, and balances. The purchase record, one for each item, contains information pertaining to ordering and receiving dates, quantities, vendors, cost, and consumption data.

Location records are maintained in the stores and substores only, and bin cards indicating the minimum and maximum quantities to be kept on hand at all times are attached to every pigeon hole. These bin cards serve as inventory records, consumption records, and requisitions either for central

stores or purchasing department, when they indicate that the minimum has been reached. All receiving should be performed by the central stores, where goods are checked with the order and a receiving slip is made out. It becomes then the responsibility of the central store either to forward goods to the departments requesting them or to put them into storage.

Operation of Supply Control System

Having gone into the principles of storage and administration of supplies, the functioning of the system as such will be studied.

Suppose that a substore has reached the minimum of item "A." This fact will be revealed on the bin card to the central storage clerk during his daily round, because the bin tag will show that all numbers up to the red-circled minimum number have been checked off. The central store clerk will remove this bin card and replace it with a new one on which he will circle minimum and maximum quantities in conformity with the old bin tag. The latter will then be taken by him to the central store and will serve as a withdrawal slip for this particular substore.

After returned to the central store, the central store clerk will fill the order on the basis of the old bin tag by removing from the central store bin the standard maximum quantity. This he then places in the delivery truck for issuance to the substore on his next daily routine inspection. He will also check off the quantity withdrawn from the central store bin tag. If in doing so he reaches the standard minimum quantity to be kept by him in the central store, he will remove his bin tag and forward it as a purchase requisition to the purchasing department. The latter will then enter the quantity consumed on the visible record card and will fill in information as to prices, suppliers, standard quantity to be ordered, etc., on the purchase order. All this information is also contained in the visible record.

Before mailing the purchase order it will have to be approved by the superintendent. The order will be followed up by using the signals on the visible record card. As soon as the order has been acknowledged, a copy will be sent to the central stores, giving notice of deliveries of goods to be expected.

When goods arrive at the mill they will be checked in, and the purchasing department will be advised of their quantity and quality by either filling out a receiving slip or by checking a copy of the purchase order. Supplies can then be placed onto the central store shelves, and bin tags can be marked as to quantity received.

In the purchasing department, the invoice will be checked by comparison with the receiving slip and with the purchase order. At the same time the necessary entries will be made on the visible supply record card, and the invoice will be passed on for payment to the accounting department.

Consumption Control

The control of consumption will be exercised by comparing the actual withdrawals of supplies from each substore with the predetermined standard usage list. This list will show any deviations from the standards for each cost period. Copies of it will be sent to the department head, the superintendent, and the purchasing department, the latter taking action whenever standards have been exceeded beyond an allowed tolerance.

The operating methods outlined will indicate to practical mill men that by bringing the supplies to the user (substores) rather than the user to the supplies, a great amount of fixers' and machine-down time can be saved. Additional benefits will be derived from the fact that store clerks deliver large quantities to the substores at one time rather than issue hundreds of parts singly.

Equal savings apply to the purchasing department which will process a much smaller quantity of purchase orders.

Finally, good housekeeping practices, tight controls, and orderliness will be facilitated by having one centralized agency responsible for the storing, receiving, and control of supplies.

Nomogram

Another in a series of helpful shortcuts for the benefit of those who frequently encounter a need for textile calculation aids.

Roving Twist Graph

It is well known that roving should neither be too "hard" nor too weak; in fact it should only be strong enough to stand the strain of creel pull without breaking. A medium twist, as depicted in this chart, serves the purpose. The chart also incorporates the relationship of progressively higher twists for finer hanks, and also the relatively higher twists for shorter staples employed.

The wide range of possibilities shown for carded as well as combed stock will represent a guiding line for "streamlined" roving twists. If a foreman finds these twists too soft, all he has to do is use the chart and add five per cent to the twist—or more if desired. The twists shown on the chart may be termed medium. They are based on the following:

For carded staple

$$T = .286\ (2.8 - L)\ (\sqrt{1 + 8\ cts} - 1)$$

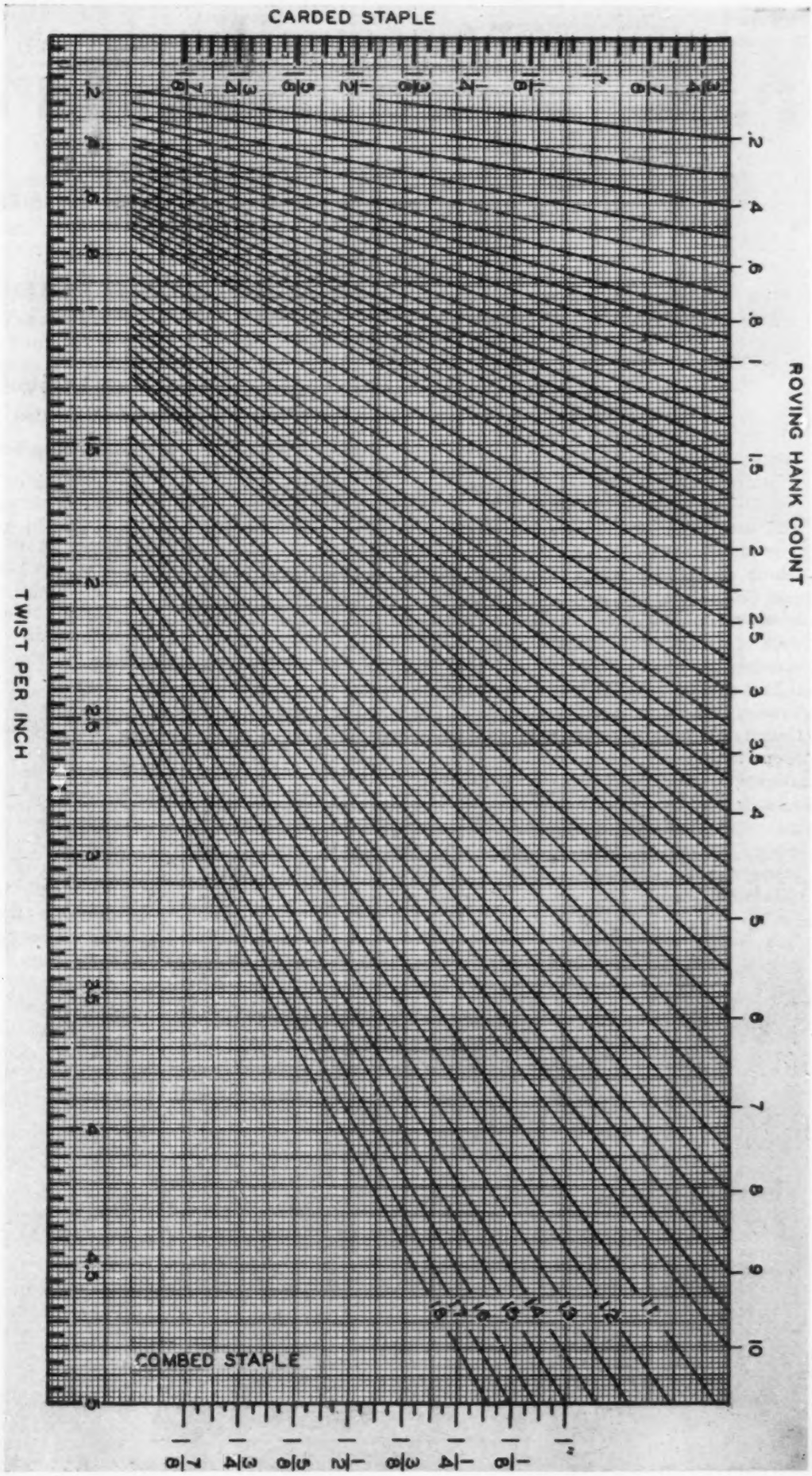
Where T = Twist per inch
L = Grader's staple length in dec. inches
cts = Hank counts

For combed roving the following formula is introduced and the values are entered on the graph:

$$T = .268\ (2.86 - L)\ (\sqrt{1 + 8\ cts} - 1)$$

This latter formula takes into account the extra staple value of combed cotton. The compensating valve amounts to approximately 5% for short cotton, and the figure gradually decreases for longer cotton.

Nomogram prepared by John Duerst of Clark Thread Company.



Example: Find necessary twist per inch for 6-hank roving made of 1¼" staple (carded).

Locate 1¼" at left vertical scale—follow horizontal line to intercept 6-hank diagonal, from which point the vertical line is to be followed to bottom scale. The twist can be read at point of intersection = 2.66. For combed hanks, start from right hand scale and follow same procedure.

Pequot Mills' Recreation Program

Operates on Year-Round Basis

By MARTIN C. POWERS

Program is credited with helping to impress on surrounding community the realization that "Pequot is a good place to work."

COMPLETING a program of year-round recreational activities for their hundreds of employees, the Naumkeag Steam Cotton Company has constructed an ice skating rink on the extensive playfield adjacent to the Pequot Mills recreation building in Salem, Mass.

Built of asphalt surface with a banked edging to retain water, the rink area does double duty, since it is large enough to contain four tennis courts for warm weather use. This winter the space will be a Mecca for all mill employees, their families and friends who are devotees of ice skating.

The skating rink is one of the newest features of the Naumkeag Company's multifold program to promote fellowship among employees during leisure time, according to Perley S. Bodge, recreational director. Because of the many directions this program takes, social and sports activities of Pequot employees now form an integral part of the life of the city of Salem, where the Naumkeag Steam Cotton Company has been operating for 109 years.

Four-Story Recreational Building

Much of the social life of Pequot employees is centered in the recreation building itself, a four-story structure of historic significance because it was the only building of the Pequot Mills group to survive the great Salem fire of 1914. In recent years this building has been completely remodeled to serve as a recreational and social headquarters.

Personnel offices and conference rooms, the latter being equipped with motion picture facilities for use of employee groups, are located on the first floor. Here are also the editorial rooms of the *Pequot Shield*, employee plant publication.

The second floor contains the employees' cafeteria, where wholesome meals are served during the day and special parties may be found in progress almost nightly. This cafeteria has become such a desirable meeting place in the Massachusetts North Shore region that many outside club groups avail themselves of the opportunity to use it.

A large lounge room occupies most of the third floor. With pool and ping pong tables, piano, lounge furniture and spacious floor area, this room is in frequent demand for dances and social gatherings. Birthday parties and "showers" are often given here, and not to be overlooked are such major-size events as the annual Christmas parties for children of Pequot folk.

The top story is given over to one of the finest bowling alleys

These new tennis courts at Pequot are specially designed for flooding so that in the winter time they can be converted into an ice skating rink for employees and their families.

"The top story of the four-story recreational building is given over to one of the finest bowling alleys in New England."

in New England. Teams of men and women, organized in leagues within the company, keep the alleys humming with activity. Mill teams also participate in city-wide matches and often entertain outside teams at the Pequot alleys. Thus bowling furnishes another link binding community social interests with those of Pequot employees.

Many Outdoor Sports

Both the Pequot Mills in Salem and the Naumkeag Company's Danvers Bleachery in nearby Peabody are known for their softball teams, which have won local recognition for their prowess.

In any season, the company's playfield is another center of healthy fun. This field is provided with children's playground equipment in addition to the new tennis courts and skating rink.

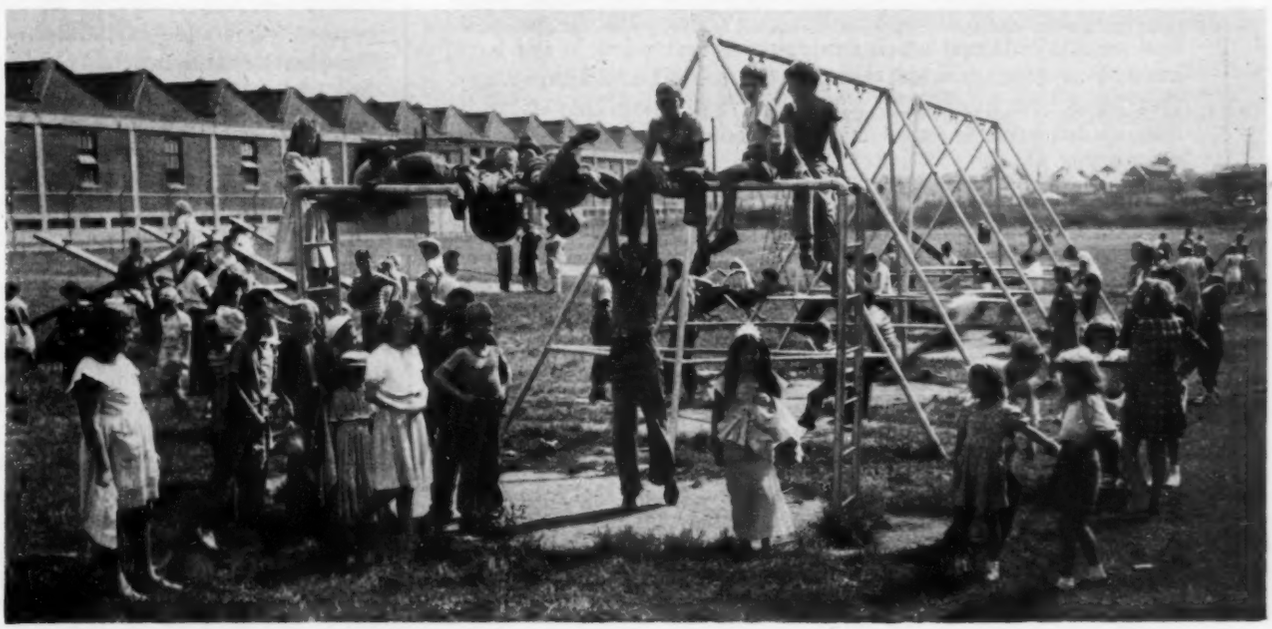
Field days for children and adults, outings, picnics and special parties are annual events on this field, which is large enough for football games as well as track and field sports. Where the play area terminates near Salem Harbor, horseshoe courts, an archery course and an outdoor fireplace for picnickers may be found.

During the past summer, supervised playground activity was inaugurated. Two college-trained supervisors conducted the program of children's playground activities throughout the summer school vacation period.

Worthy of special mention is the Naumkeag Steam Cotton Company's sponsorship of a Boy Scout troop in Salem and a Sea Scout troop in Peabody. The Sea Scouts are a real, ocean-going outfit and for their use a 33-foot picket boat has been acquired from the Navy.

Rudolph C. Dick, president of the Naumkeag Company, credits the busy recreational program with helping in large degree to impress on the surrounding community the realization that "Pequot is a good place to work."

Pequot children show off for the cameraman when he visits their playground. A "horribles" parade had just ended when this photo was made, hence some of the costumes.



Mills Say Slasher Lubricator Unit

Reduces Warp and Filling Stops

A SYSTEM of warp sizing which is a departure from standard practice has been in use on a production basis for the past several months. A survey of the mills using the new principle shows that the results are very encouraging, and in some instances almost unbelievable.

According to mills having experience with the system, not only have warp stops been greatly reduced, but filling breaks show a decidedly favorable reduction.

The principle of the new process is that the fats or lubricants, commonly applied in the size mix, are now applied separately from the starch mix and immediately following the starch application, but in one continuous operation at the slasher.

The starch paste is applied to the yarn from the conventional size box equipped with conventional size rolls; the lubricant, fat, or "size compound" is applied to the starch-pasted yarn from a roll which operates in a bath of lubricant. This lubricating roller is located between the size box and the cylinders. With this arrangement on a conventional slasher, the yarn passes into the size box, is starch-pasted, dressed by the conventional squeeze rolls, passes over the lubricant roller, and is then cylinder-dried in the usual manner.

Although the results at mills using the separate application method of warp sizing are favorable, it is difficult to interpret all phases of the results at this time. It is known that by separate application of lubricant on the surface of the yarn, the parts of the loom coming in contact with the warp also become lubricated. These parts are the whip roll, drop wires, heddles, reed, and shuttle, the latter seemingly receiving special lubrication, from contact with the warp as it passes through the shed.

It is thought that the shuttle being lubricated at all times accounts for the reduction in filling breaks. And it is known that results obtained when running the first warp in the loom are not as good as when running the second and third warps that have been separately lubricated, indicating that as additional lubrication is imparted to the loom parts, the better the warp runs.

It is not to be construed that lubrication of loom parts is the only factor in reducing loom stops; other contributing factors are explained in the accompanying article. According to one mill man, who frankly admitted he could not offer a full interpretation of the results, even though they were good, the findings in recent months "may lead to approaches on warp sizing which we never dreamed of before."

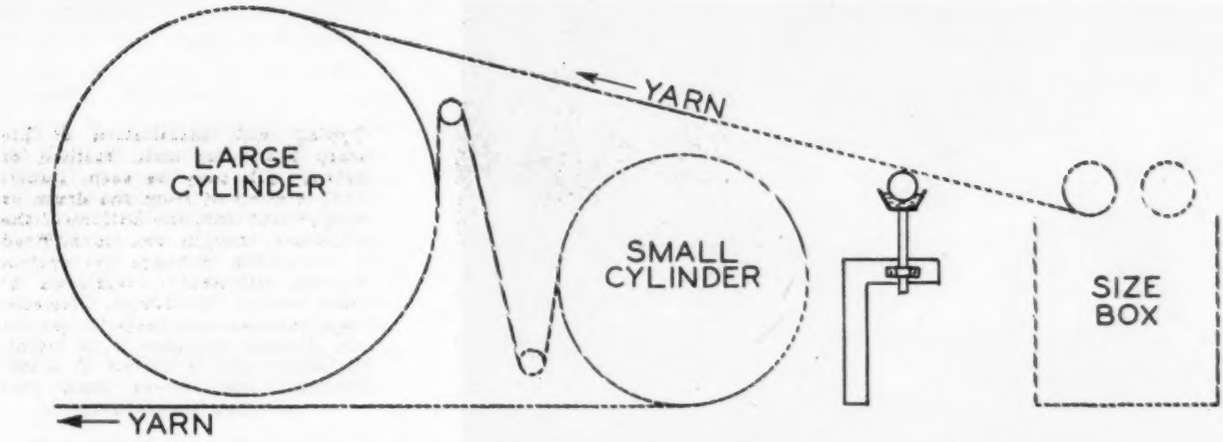
The system and the results have been described briefly. Further information on the lubricant applicator and the research findings of separate lubricant application, plus some of the results obtained, are given in the following detailed story, most of which was obtained from a prepared report by the organization developing the process, but including information from the mills experimenting with the new system.—*The Editors.*

THE PURPOSE of this report is to disclose some recent findings with respect to the functions of warp sizing and to present a recently developed patented process for the sizing of cotton and staple synthetic fibers. Research investigation on the influence of lubricant materials in starch films and the results obtained from practical mill tests where starch and lubricant have been applied separately in the slashing process have opened up a new approach to increasing the weavability of sized yarns.*

IT HAS BEEN established warp sizing practice to apply to the warp yarns from a hot water solution and/or suspension a combination of starch or other film-forming substance and materials commonly referred to as "sizing compounds." The wide variation in the composition and use of these sizing materials has sprung from a host of intangible factors which have been largely resolved by trial and error methods. It is an interesting fact that there is as much difference of opinion among the specialists who supply these important materials to the textile manufacturer as there is among the manufacturers themselves.

There is no intent in this brief treatise to eliminate these differences of opinion, but rather to present some factual and visual information which may be of value

*Abstract based on prepared report by Southern Sizing Co., P. O. Box 167, Atlanta 1, Ga., and including information secured from mills using process.

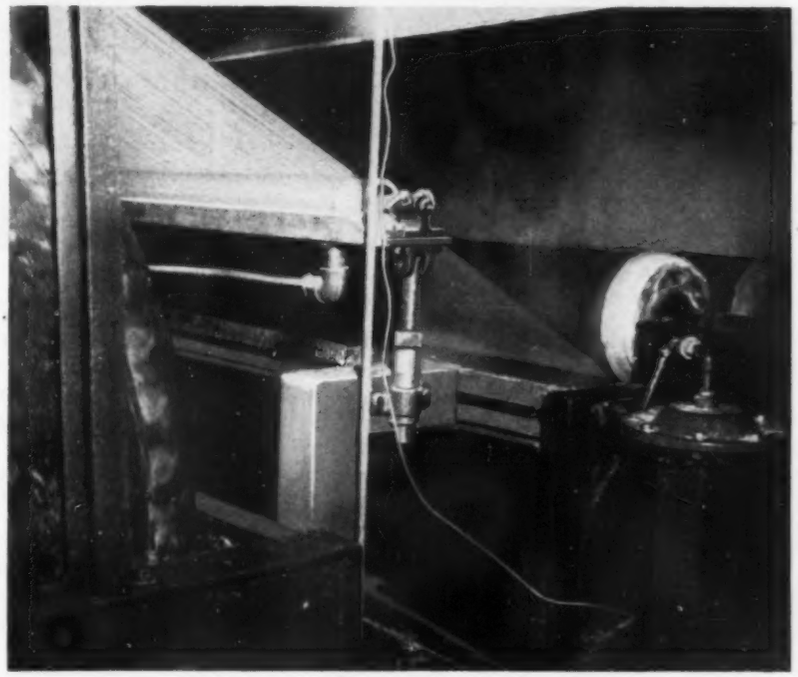


Sketch showing location of lubricant applicator on slasher. With this arrangement on a conventional slasher, the yarn passes into the size box, is starch-pasted, dressed by the conventional squeeze rolls, passes over the lubricant roller, and is then cylinder dried in the usual manner.

in eliminating some of the unknowns in the equation for determining the maximum in sizing efficiency.

Function of Sizing

The prime function of the sizing compounds has been to soften or to lubricate the starch film in the interest of increased flexibility and weaving efficiency. Of the other functions may be listed increased hygroscopicity, inhibition of mildew growth, penetration, preservation, weighting, modification of starch, and formation of films as an adjunct to the starch film itself. The basic ingredient of the sizing compounds is fatty matter, which in this discussion shall be construed to include the saponifiable fats, oils and waxes, and the unsaponifiable mineral products such as mineral oils, petrolatums, and paraffin waxes. The mechanism of the softening or lubricating action that these materials exert upon starch films has been the subject of much controversy.



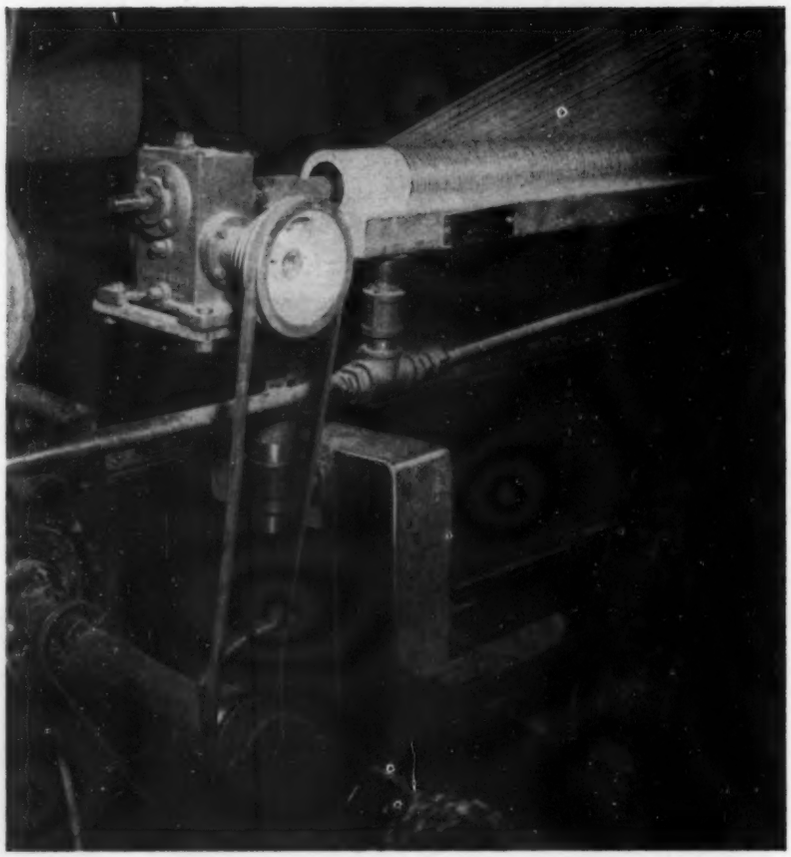
View of the applicator roll on a slasher. There are no roller coverings, squeeze pressures or temperature controls on the warp applicator unit. Uniformity of fat addition is said to be achieved. Also, microscopic examination of slashed warps is said to show that the resulting lubricant coating is uniform and complete with respect to the entire circumference of the yarn, even though the warp passes over the top of the applicator roll.

Photomicrographs of sized warp yarn show that the film application occurs mainly at the outer edge of the yarn and that penetration has amounted to an anchorage of the film at no great depth within the individual ends. This outer protective coating protects the yarn from chafing, strengthens, and gives individuality to the separate ends that they may better stand the abrasion and tension to which they are subjected in reed, heddles, shed, and dropwires in the weaving operation.

Much research is being done in attempting to develop a test for the weavability of sized yarns. Laboratory testing to date can only establish a set of values for several properties of sized yarns, such as tensile strength, elongation, added weight and regain, abrasion resistance, stiffness rating, and fiber lay. An evaluation of these properties is indicative of weave room performance but by no means conclusive.

Advancement in the science of sizing continues to be limited by the fact that long series of practical mill and finishing plant tests are necessary for any reasonably accurate evaluation of sizing materials.

Other photomicrographs show



Typical mill installation of the warp lubricator unit. Method of driving roll may be seen. Lubricant is pumped from the drum or supply tank into the bottom of the applicator trough and is allowed to recirculate through the system through adjustable overflows at either end of the trough. Conventional squeeze rolls may be seen at left. Slasher cylinder is at right. Applicator roll is driven in same direction, but slower than the starched warp sheet.

that fatty matter in the size mix appears in the dried starch film in more or less of a spherical form and as discrete particles separate from the starch film itself. This seems to indicate rather clearly that it is the function of fatty matter to afford surface lubrication to the film and not to plasticize or soften the starch film. These findings go far in explaining the detrimental effect of adding larger quantities of lubricant materials to starch pastes in that the discrete and separate particles tend to interfere with the adhesive qualities of the resulting films by interrupting their continuity.

It is an established fact that the addition of fats up to a certain point improves weaving qualities; beyond that point, weavability decreases.

Separate Application of Warp Lubricants

Following research on the influence of the common warp lubricant materials in starch films, a project was undertaken to explore the possibilities of lubricating sized warps without introducing fatty matter to the starch pastes. Patent investigation and a review of current scientific literature disclosed the fact that although previous investigators had worked in this field with oil spraying and the application of melted fats, that there were no commercial materials available in a form which could be applied simply and efficiently to the warp yarn sheet in mill sizing on the conventional cotton and rayon slashers.

A product has now been developed to be used in the separate application of fats. A considerable number of organizations and mills participated in the development.

Some interesting observations have been made.

When the warp lubricant material was added to the warp subsequent to the sizing with starch, a "waxed effect" was given to the individual ends which allowed easier separation of the sized ends from the dried warp yarn sheet at the front of the slasher.

A marked lubricant effect was produced on the metallic parts of the loom which came in contact with yarns so sized, and the shuttle itself was lubricated by contact with the warp in the shed of the loom.

Reasons for Increased Weaving Efficiency

The increased weaving efficiency obtained from the separate application of starch and lubricant is attributed to the facts that (1) the fat particles are not present in the starch paste to interfere with the continuity of the resulting films, and (2) that the lubricant is applied to the outer edge of the sized yarns where it affords surface lubrication to the individual ends and mechanical lubrication to those loom parts which contact the warp.

This mechanical lubrication effect is substantiated both by visual inspection and the marked reduction in filling stops as well as warp stops.

The patented** process involves the installation of a warp lubricator unit or units between the present size box and the first drying cylinder or chamber, or between the drying cylinders, and applying from this lubricator the liquid sizing material.

The warp lubricator units are delivered complete, and only a few hours are required for the installation at the slasher. Lubricator roller speed and liquid level controls are built in as integral parts of the unit.

Mill testing has indicated that

**U. S. Letters Patent No. 2,074,745, issued to Ira L. Griffin, Charlotte, N. C. Licensing under this patent by Southern Sizing Co.

fat addition in the range 0.7% to 1.5% on the basis of warp yarn weight produces the optimum in weaving efficiency. The yarn numbers being slashed, the sley and pick of the goods being woven, and slasher speed are the three principal variables which require consideration in establishing the desired amount of lubricant to be applied. Positive control of fat addition is obtained by the driving of the lubricant applicator roller from the slasher drive shaft through timing gears.

Early in these actual mill tests an investigation was made of the possibility of adding too much fat to the outside of the yarns and thereby producing warps which might run "soft" in the loom, an effect which has been produced by adding more than 1% fat to the warp when the starch and lubricant are applied together. Tests have been made using the lubricant roller, and warps were slashed containing 12% added starch and as high as 4.46% added fat; in this case loom efficiency was exceptionally high and fiber and starch shedding were almost nil.

Fabrics sized by the separate process application have been subjected to most types of after-treatment, including bleaching and dyeing, grey dyeing, coating, sanforizing, desizing, scouring, cutting, napping, and water-repellent finishing; the results are said to be at least equal to those obtained by conventional sizing methods.

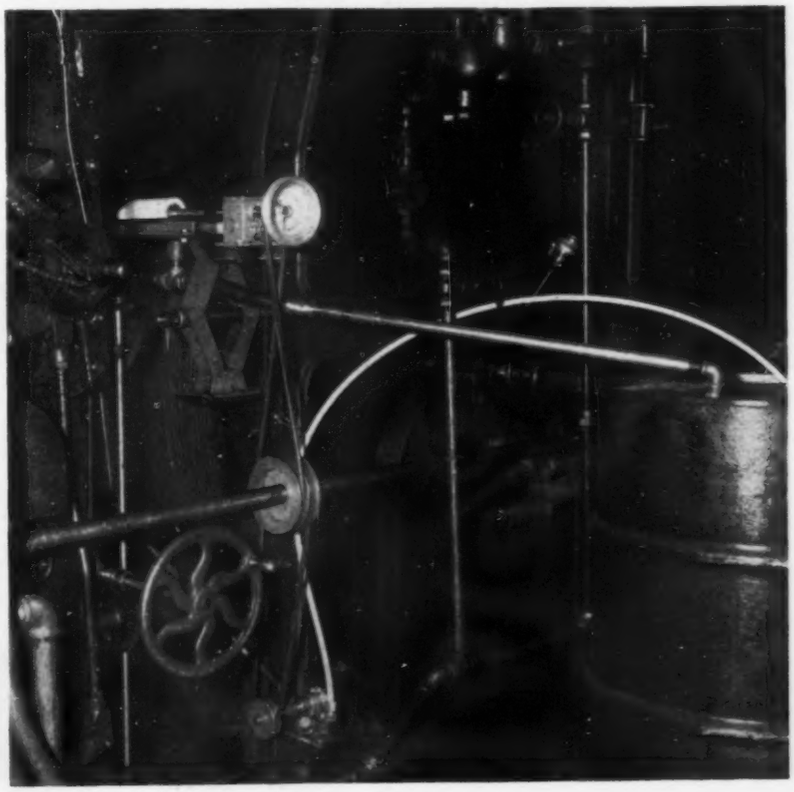
An improvement was noted in the ability to desize.

Sizing Formulas

It has been found from mill tests that the concentration of starch in the mill size formula need not be changed. The actual amount of added size is not changed from that obtained during conventional sizing with starch and sizing compound applied together in the size box. In particular cases where relatively large quantities of sizing compounds containing starch, dextrine, gums or other weighting materials are being added to the size kettle, it has been found advisable to replace these solids with an equivalent poundage of the mill's warp sizing starch.

Above, close-up of lubricant applicator roll and trough. Warp being slashed is to be used for weaving blue denims.

Below, warp lubricator installation on a three-cylinder slasher, showing drum, pump, timing gears, and lubricator roll.



Cloth Room Practices

By WALTER FRANCIS

THIS is the second article in a series on cloth room procedures and practices. In this installment the author discusses efficient cloth room arrangement, inspection procedures, operating speeds, preparation of rolls, and other practices relative to processing different fabrics in the cloth room.

Article 2

AN IDEAL cloth room should have plenty of room, and the machinery should not be crowded. The light should be adequate, and the machinery should be streamlined for a minimum of handling operations. Such an arrangement is particularly suitable for mills making cloth of one or two different varieties.

The loom rolls should be placed on platforms in the weave shed. When they become full, a lift jack is placed under the platform, and it is taken to the cloth room. The loaded truck is weighed on scales just inside the cloth room. The platforms are then placed back of the sewing machines and are moved into place as needed by the same man who brings them to the cloth room. There should be storage room for twenty or thirty full platforms.

The goods are sewed together and run into a scray, then through the brusher, shear, into another scray, and then to the folder. One motor-driven fan keeps the brusher clean and creates a vacuum for the shear. The fan discharges into an air filter located conveniently to the machines where it can be cleaned out regularly. Use of this filter helps maintain the correct humidity and heat in the cloth room.

The folders have air lifts to the table so the operator does not need to lift the cuts from between the jaws. When the cut is finished and folded over, the air lift raises the table and cut so that the cut of goods can be moved over a slide to the inspection table. The slide retracts under the table when not in use. It rests on the frame of the folder when in use.

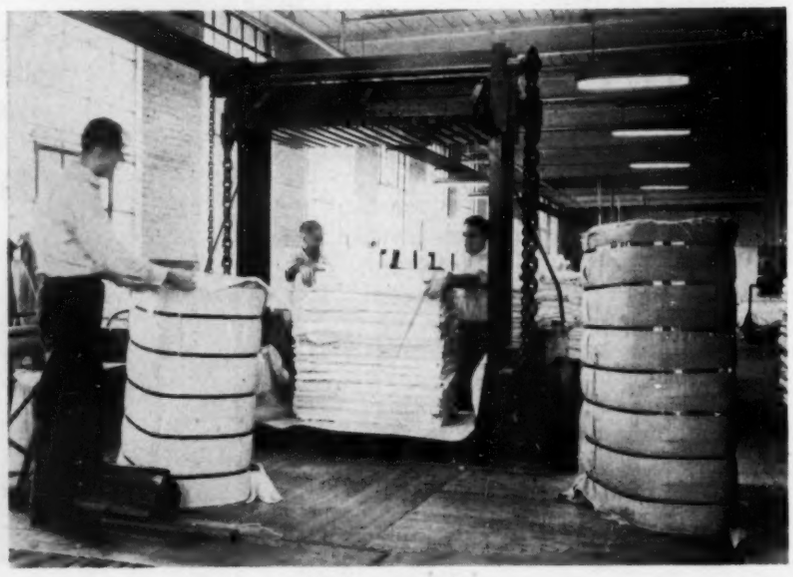
Inspection

The inspectors who inspect the goods in the fold should be provided with an adjustable seat for comfort. Inspecting can be done on two long tables with a traveling belt between them. If the cut is perfect, after the inspection it is pushed onto the traveling belt which takes it down to the press. If it has some defect that must be passed on by the grader, usually two sticks with a ridge to keep the cut from slipping are pushed under the cut, and it is pushed over the traveling belt to the other table to wait to be passed on by the grader.

The traveling belt has a switch which is tripped by the cloth at the end near the press. This stops the belt so the cut can be lifted off and placed on a truck for baling. Nothing but firsts travel down the belt. The seconds are placed on trucks by the graders according to length.

The firsts are placed on trucks with a false bottom. When a full bale has been placed on the truck, it is taken to the baler. The false bottom is hooked to a compressed air device that pulls it under the press. When the bale has been strapped, it is pushed onto the floor and one end is sewed. A compressed air plunger then turns the bale so the other end can be sewed. If the bale is to be shipped

Scene in cloth room in large mill, showing operators baling cloth.



immediately, it is taken to the store room. If it is to be kept any length of time, it is placed in a rack by an electric lifter.

Operating Speeds

The speeds of the different machines to make such an arrangement efficient are as follows:

The draft roll on the scray back of the sewing machine runs about 150 yards per minute. The draft rolls of the brusher and shear are synchronized to run 96 yards per minute. The draft roll of the scray between the shear and folder is synchronized with the draft roll of the shear to receive the goods as fast as they are delivered. In this way, there is no undue tension on the goods from the first scray to the last that might affect the width. The folder runs 120 yards per minute which allows for the necessary stops on this machine.

One mill making narrow sheetings and osnaburgs, has a method that suits them perfectly. When the goods reach the cloth room, the overseer knows how the goods will be put up for shipment. That is, whether they will be baled or shipped in rolls.

If they are to be baled, the loom rolls go to the stitcher where they are rolled in a large roll 36" in diameter. This roll is then brushed and sheared, and re-rolled all in one operation. The roll is then taken to the folder and the goods are arranged in yard folds. The cloth is then inspected, graded in the fold, and baled.

Preparing Rolls

If the cloth is to be shipped in rolls, the loom roll is placed in a cradle in front of the folder, the fabric is arranged in yard folds, and is then inspected and graded. The firsts are then taken to a sewing and rolling machine. This machine makes a butt-seam and makes a roll of the size required for shipment. The material is then brushed, sheared, and rolled up with guiders on the rolling-machine. The rolling-machine is equipped with a measuring attachment to obtain accurate measurement.

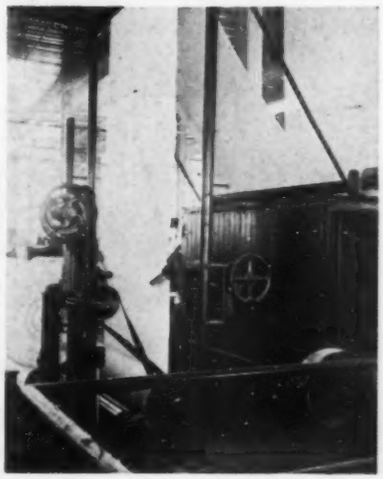
The only objection to this method is that the shear might do some damage to the goods that may not be noticed until after the fabric has been processed. Such conditions may possibly result in a costly complaint from the finishing plant. It would pay in the long run to make a separate operation of the rolling after the material has been processed, inspected, and graded.

The two methods described indicate to some extent why mills use different methods. In the old days, goods were kept in warehouses for weeks or months, perhaps, before the mill knew where they were to go, or how they were to be put up for shipment.

Most narrow goods such as print cloths, sheetings, osnaburgs, muslins, broadcloth, jeans, drills, sateens, gabardines, denims, etc., can be handled by the streamlined method.

Cloth rolls of various sizes are prepared for shipment.

View of portion of tandem arrangement for handling cloth, showing vertical brusher at right. Cloth is measured and wound on machine at left.



Speed Governed by Production

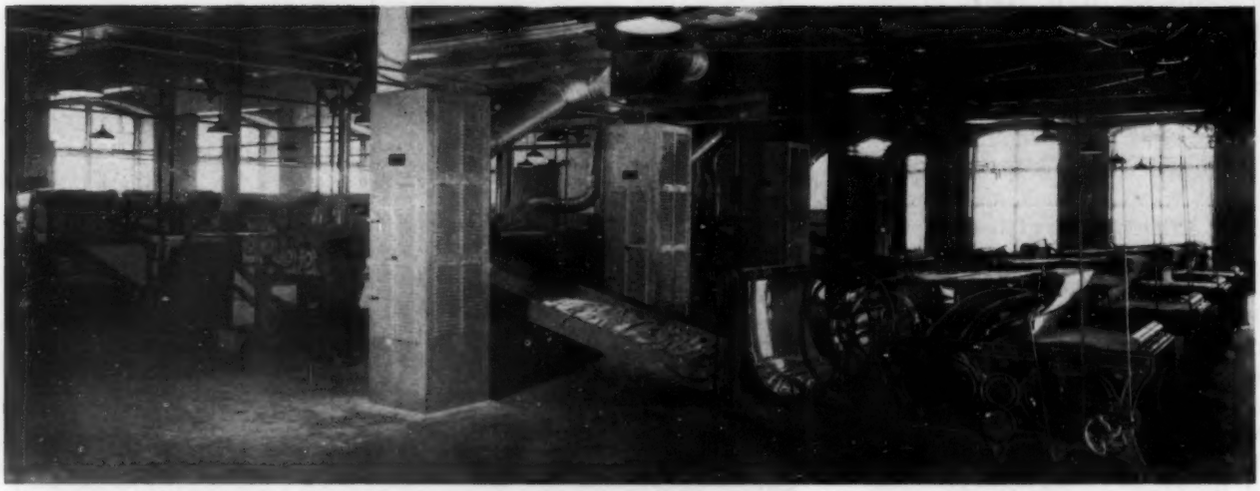
The speed of the cloth room machinery in any mill is usually governed by the production of that particular mill. If sixty yards per minute will take care of the production, it would be foolish to run any faster. Slower speeds permit better results from the brusher and shearer, and a better package on the folder with more even folds. If the cloth room is small and the production large, as in some mills, with only room for one line of cloth room machinery, shears are run as fast as 130 yards a minute. You cannot secure good shearing at that speed because the vacuum is not allowed enough time to lift the threads to be cut off.

Wide Sheetings

Procedure for handling wide sheetings is fast becoming standardized. There are now two methods in common practice.

In one method the loom rolls are placed in a cradle and the fabric is sewed with a butt-seam. The cloth is then run into a scray, through a vertical brusher, shear, and is rolled up into a large roll about thirty-two inches in diameter.

In one mill, the rolls are taken to a special inclined-table inspec-



Tandem arrangement of cloth room machinery that is being used in some mills for processing print cloth and sheetings. See line drawing at bottom of page for details of construction.

tion machine that unwinds the goods at the same surface speed at which they are re-rolled. The machines have a reverse motion but the fabric being inspected is always tight and under tension.

One girl works at each table. She sits on a chair equipped with ball bearing casters that run in a track on the floor so she can move easily in front of the table to reach any defect in the goods. Any defect that cannot be corrected without cutting the goods, is marked plainly on the selvage with gummed paper or a colored string sewed through the selvage.

The inspected roll is then taken to a re-rolling machine where the goods are re-rolled for shipment. The cloth is run into a scray. When the cutmark is exposed the material is cut, and the seconds are wound into a roll on the front of the scray. A butt-seam sewing machine sews both the roll of firsts and seconds so that each roll is in one continuous length when finished. The rolling head is equipped with a set of guiders, spreader roll for removing wrinkles, and a yardage measuring attachment. When the roll of seconds is large enough, it is re-rolled the same as the firsts and marked as seconds.

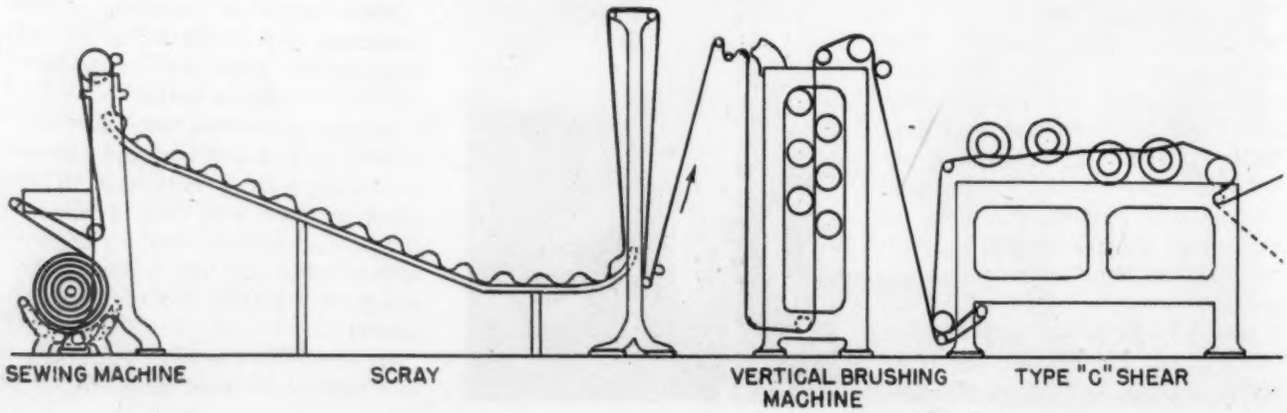
Other mills perform the brushing and shearing operations in the same way but they use a tandem inspection table. The large roll is placed at the back of the first machine. The cloth travels up the table and into a scray between the two machines. The first inspector burls one-half the width of the cloth from the battery side over. From the scray, the cloth goes down over the second machine, and the opposite half is inspected.

Since the battery side of the cloth has more defects and takes longer to inspect, this machine runs at the rate of 30 yards per minute. The second machine is run at about forty-five yards per minute because the second inspector does not have as much work to do or as many imperfections to correct. All cutting is done on the second table after being marked or partly torn by the first inspector to show where it should be cut. The goods have to be re-rolled before shipment, and all the cutting and sewing can be done at that time.

Another Method

The second method is to inspect each loom roll separately. All imperfections are corrected and the cloth is cut whenever necessary. The rolls of firsts are then sewed together with a butt-seam, and the material is run through the brusher and shear before being rolled for shipment. This is a much slower operation than the first method and is the reason why it is being replaced by the first.

Wide sheetings that are put up in the grey for direct shipment to the market are usually double-doubled to one-quarter the original



width. The cloth in that condition is left in the large roll for several hours so the creases will be set. Then they can be run on a folder in yard folds, put up in flat packages, or in rolls on tubes for shipment.

Several mills use a special winder for the flat package with a lot of tension to make a firm package. This not only saves space in the carton, but it also makes a better looking package that is easier to handle. The winder is equipped with a swivel collapsible plate which permits all of the goods to be pulled off the plate easily. Pulp boards, or heads can be used to hold any kind of special board desired.

Some goods are put up on a feather board that has an end wide enough for the trade name to be plainly seen. Each package is measured accurately as it is wound. The end is turned in, and paper bands are placed about two inches from each edge around the cut.

Combination brushing and shearing. Note air filters at right.

Pillow Tubing and Flannels

Pillow tubing is not usually handled like ordinary goods. The loom rolls are sewed together and rolled in a large roll on a sewing and rolling machine. The roll is brushed and sheared; then it moves to the inspection machine where it is inspected on both sides. The material is then carried to the folder where it is arranged in yard folds.

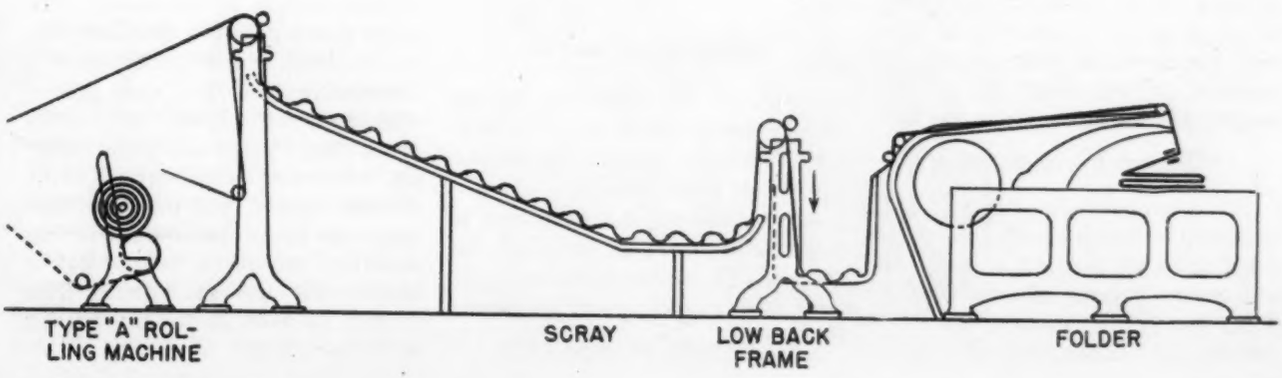
Pillow tubing cannot be run into a scray because air will get inside the tubing and will distort the goods so that it will not run straight through the brusher and shear. If the goods are handled in roll form, they will run straight.

Flannels are handled very much like other grey goods. After being received from the weave room, they are sewed, brushed, sheared, and wound on a large roll. Some mills use the butt-seam, especially if the goods are to be double-napped. If the goods are single napped, the thick chain stitch can be used. Very light goods cannot be brushed and sheared before napping. The object of shearing is to remove as many hanging threads and selvage threads as possible. This will keep the napper rolls cleaner for a longer period of time.

When the cloth leaves the nappers, it is folded and placed on a truck. After the desired nap is raised, the truck of finished goods is taken to an inspection machine for final inspection.

On one type of machine, the inspector sits in a chair, and the cloth passes between the inspector and a light. An electric light is best because it is constant, regardless of weather conditions.. The light permits any imperfections to be easily seen, and they are corrected on this machine, if possible. Any cutting that is necessary can be done on this machine, or they can be plainly marked to be cut later on the folder, or winder.

Wide flannels can be shipped in rolls, either in the open width, or doubled to one-half the width. Narrow goods are run on a folder either in one and one-quarter, or one and one-half yard folds. In recent years, most flannel folders have been made for one and one-



half yard folds because the mills have made longer loom-rolls, and they need the extra capacity on the folder. If shipped directly to the trade, the goods can be put on boards on a winder, and paper bands can be put around each end.

Napped goods, such as head linings for automobiles, or upholstery material, are usually sheared on a special shearing machine after being napped. This operation is necessary to cut off the long ends to make a smooth, even appearance. These goods are usually wide and are shipped in rolls on paper tubes.

Spun rayon is handled the same as other grey goods. The same machinery can be used, and the goods are treated in the same manner. Usually, if the material is inspected in the fold, it is opened the full length of the fold so that two yards can be seen by the inspector. In this way, all of the goods can be thoroughly inspected.

This railway sewing machine makes a butt seam and is used to sew the pieces of cloth together preparatory to brushing.

Filament Rayon Fabrics

All rayon goods must be handled differently. Since rayon is brittle, most mills do not use a scray. If the goods become packed in the scray too tightly, some of the filaments might break, and this would show in the finishing.

A duplex sewing machine is in general use to sew the rolls together. The rolls of cloth are brought to the sewing machine and are placed in brackets on the front of the machine. The ends are sewed together, and the cloth is wound on a drum at the back. Two winding drums should be provided so one roll can be wound while another is being run through the shearing machine.

The sewing and shearing machines should be run fast enough to prevent time being lost by waiting for another roll after one has already been sheared. It would be useless to run the shear at such a fast rate of speed that the sewing machine operator would not have sufficient time to prepare another roll.

Method of Inspection

The rolls of cloth are sewed with a chain stitch because each seam must be pulled out on the inspection machine.

After shearing, the large roll is taken to a machine for final inspection. The method preferred by most mills makes use of the perch

(*Continued on page* 171)

Twisting

By HARDIN BOTLEY
(England)

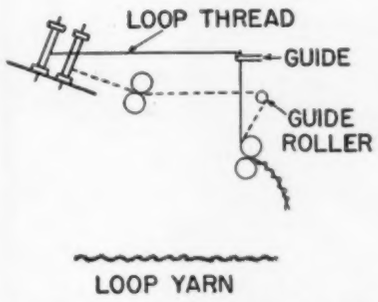
SOME fancy yarns possess characteristics that appear prominently in the finished cloth. These yarns are valuable to the textile designer. Designing is now a specialist's job, but it was previously done on a trial and error basis. Although some of the results obtainable in fancy yarn production may be a little difficult to reproduce, the yarn designer can play his part just as the fabric designer, and "designed" fancy yarns are proving their worth. The yarn designer needs to know the ultimate purpose for which his yarns are required, and what special characteristics need to be developed.

Some types of fancy yarns can be made on regular twisting machinery; others demand machinery which is specially adapted with auxiliary parts and motions for the purpose. It may be noted that the conventional type stop motion ring twister has only one line of delivery rollers. The fancy twister has two or sometimes three lines of delivery rolls, each with an independent drive and variable speed control. The top rollers are normally dead weighted. If fine variations are desired, an intermittent action is necessary. The twist gearing to the delivery rolls should include a peg wheel. It is imperative that the stop motion should work 100% efficiently when fancy yarns are being twisted. The same considerations apply to any twister, but more particularly to fancy twisters. Another auxiliary motion is the oscillating motion for the guide bars. This motion is used in the production of knop yarns.

Novelty Yarns

A DEPARTURE from conventional practices in the twister room to produce novelty yarns calls for special considerations and provisions. This treatise deals with some of the methods employed in the manufacture of different types of novelty yarns, some of the precautions to be observed, and other aspects worthy of attention.

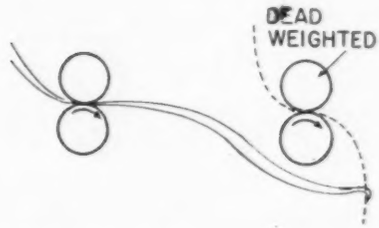
Loop Yarn. Loop yarn depends not only on fancy twisting but also on the type of material used. It can be made with materials of good staple length, such as mohair, Lincoln and Leicester wool, and continuous filament rayon. The foundation thread and loop binder thread can be of any material. They can be single or folded yarns. The foundation thread runs through the back rollers. In making loop yarn it is necessary to run the back rollers at a slower speed than the loop thread. The excess delivery of the looping end will determine the size of the loop.



One method for making loop yarn.

Spiral Yarn. Twist-on-twist yarn is sometimes termed a "snarl" yarn because of the tendency to snarl. A spiral yarn can be made by having one end "S" twist and one end "Z" twist. A spiral yarn can also be made by merely having excess delivery of one end. It is usual to have a twofold yarn for the core to give extra strength. In this case and in all processes of fancy twisting, it should be noted that the slower moving roller always controls the ground threads. To give the maximum luster to a yarn of this type, seven-tenths of the spinning twist is used in folding.

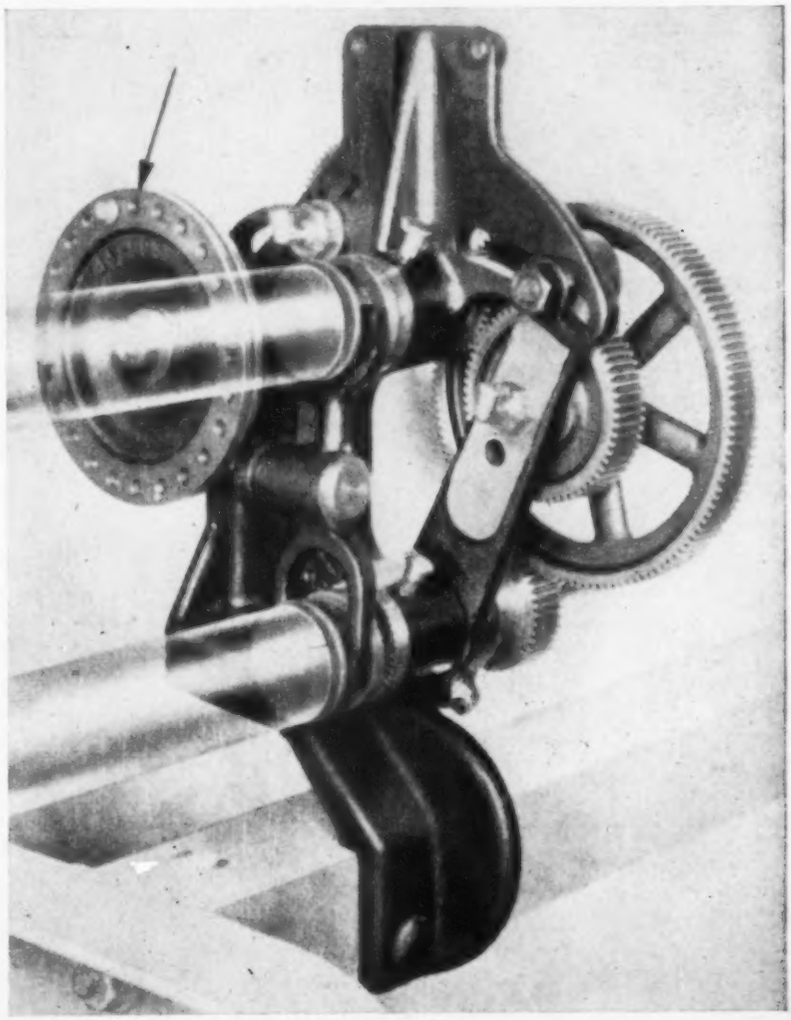
It may be possible to use a single roller as shown on page 102. The two foundation threads pass under the roller, and the spiral end passes through the groove in the roller.

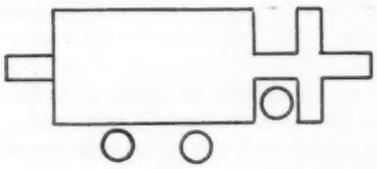


Spiral yarn can be made with an arrangement such as the one shown here.

Two common types of top rollers which will produce most of the

Top and bottom roll actuating and control mechanisms on the Whitin Type "C" novelty yarn attachment. Note peg wheel at left (arrow).

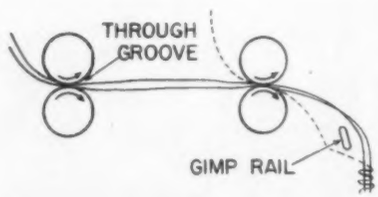




Above, showing how a single roller may be used in the manufacture of spiral yarn. The two foundation threads pass under the roll, and the spiral end passes through the groove at right.

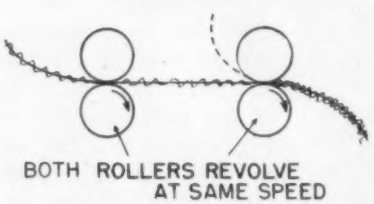
usual types of fancy yarns are shown herewith.

Gimp Yarn. Gimp yarn is known by various names, such as "snuffle yarn," tuffle yarn, and sponge yarn. A loop is a type of gimp made in much the same way. The front rollers may run at three times the speed of the back roller, and a gimp rail is brought into use. The foundation threads pass over the rail and the gimp end passes under the rail as shown in the illustration.



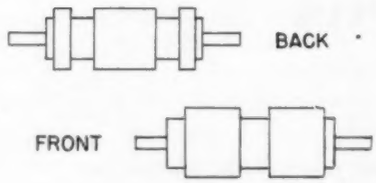
Caution should be observed when gimp yarn is made in this way because the gimp end is loose and slips about on the yarn. A second operation of twisting is needed to bind the gimp and hold it in position.

Binding the gimp.



Knop Yarns. There are many uses for knop yarns and they can be made in several ways. Sometimes equal sized eccentric wheels are used, and sometimes a peg wheel is incorporated into the gearing. If ordinary cut gears are

Below, two common types of top rollers used in the production of fancy yarns.



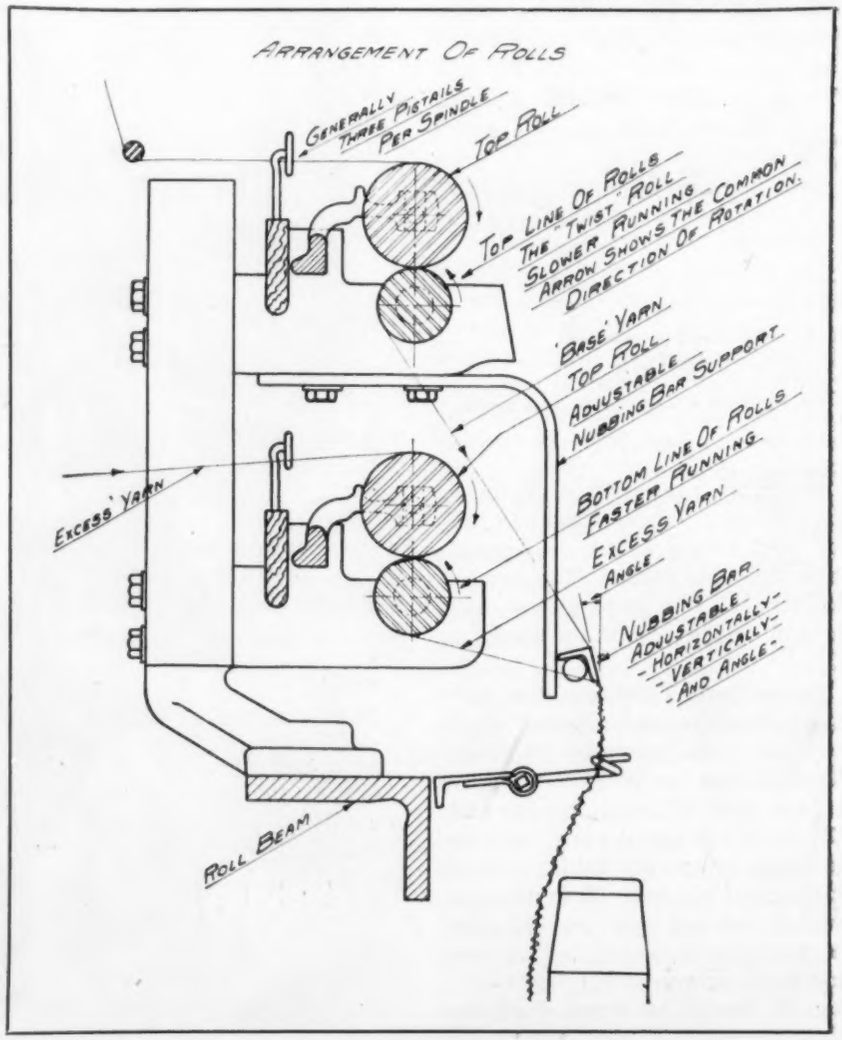
used, and some of the teeth are removed, the first tooth to re-engage should always be filed down to prevent the possibility of backlash.

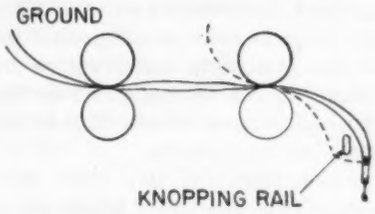
The ground threads have intermittent delivery, and when delivery of the ground threads stops, the knopping end builds up in one place. The size of the knop is determined by the thickness of the knopping thread, and the time of stoppage. Movement can be transmitted to the oscillating bars (that form the knopping rail) by means of cams. This movement can be utilized in several ways. The back roller and front roller have entirely independent drives. This feature can be made use of to produce a two-color knop using two colored ends. First the back roller stops. Then the front roller stops so that the threads delivered by the respective rollers become alternately ground and knop ends.

Knop yarns may also be bound to fix the knop securely. In the case of three color knops, the use of three separate knopping rails is involved. An objection that has been raised in connection with knop yarns is the problem of patterning. Where knops occur at equidistant points in the yarn, there may be a danger that in the

Sectional drawing of roll section on a novelty yarn twister, illustrating the lead of the yarn through the rolls to the thread guide.

Courtesy, Whitin Machine Works

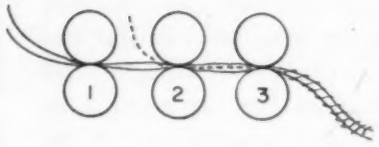




Method for making knop yarns.

finished piece the knop may form a distinct pattern that is not desired. This occurs if the distance between knops is directly relative to the reed width. The fancy yarn producer should be given as much help as possible from the manufacturer. He should be informed as to what the width of the cloth is to be so that he may be able to predetermine the movement of the knopping rail.

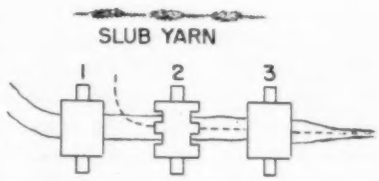
Slub Yarns. When slub yarns are made on a fancy twist frame, the front roller is stopped intermittently. In fancy twisting, the slub may be discontinuous, but in any case it must be produced from a softly twisted material such as cotton roving. A three roller frame is needed to produce a discontinuous slub.



Rollers 1 and 3 rotate at the same speed.

Roller 2 is intermittent in action.

Roller 3 runs twice as fast as 2



to draft the end and thin out the ends of the slub.

Consideration of Costs. The production of fancy yarns is costly, and very accurate costings are needed if the yarns are not to be sold at a loss. Many of the fancy yarns produced are made by twist and the resultant count of the finished yarn is no criterion of cost. The cost must be based on the raw materials, labor, overhead, and *turnoff* which will be considerably below normal twisting production.

Fancy twisters cannot be run at anything like the speed of normal twister frames. Further, consideration should be given to the type of yarn produced and how it is likely to react in weaving. In the early days, many fancy yarns were produced, which although weaving satisfactorily were likely to crack in finishing due to brittle ground threads. The yarns must be balanced, i.e., in twist-on-twist yarns, if the normal folding twist is "S" twist, say 15 turns per inch, start with 15 turns "Z" twist, thereby having 30 turns before twist inserted tends to become a difficulty and causes brittle yarns.

The Corporate Cost of Living in the Wool Textile Industry

By CURT E. FORSTMANN*

President, Forstmann Woolen Co.

The experience of an individual company which may have a broad application to the wool textile industry.

THE WOOLEN and worsted textile industry is composed of some four hundred separate, independent organizations and constitutes, therefore, one of the most competitive basic producing industries in the United States. As president of an important unit of this industry, I feel justified in presenting certain facts concerning the operations of our own company.

A careful examination of these facts will prove that whatever price increases have been necessitated at the fabric level have been fundamentally due to: (1) The policies of the government itself, (2) The inexorable, general results of inflation brought about by these policies, and (3) The usual results of war.

Increases in fabric prices have not been brought about by excessive mark-ups and profits. Seventy-five per cent of the cost of a yard of cloth consists of two items:

1—raw material, consisting of wool and other fibers;

2—the labor necessary to convert these fibers into finished cloth.

The price of our chief raw material—wool—has for many years been controlled by the American and by the British governments.

*Abstracted by permission of the author from booklet entitled "The Corporate Cost of Living in the Wool Textile Industry," recently published by Forstmann Woolen Company, Passaic, N. J.

At a time when there is a great deal of discussion about increased costs of living and the possibility of a return to price controls, I feel that it is fitting for individual companies to make statements on their own behalf in an effort to clarify the situation as it actually exists.

I give the following facts in a sincere effort to show what price increases have occurred within the wool textile industry and what have been the causes leading to these increases. I am not presuming to speak for our industry, but I feel sure that the illustration I am giving of the Forstmann Woolen Co.'s operations has a broad application to the industry, of which we are a part.

Cut E. Forstmann

American mills, in purchasing the wool which they must have in order to operate, must without any volition on their part either pay at least the parity price of the Commodity Credit Corporation for domestic wools or at least the minimum prices set for British Dominion wools by the British Joint Wool Selling Organization.

The present high world prices for fine wools are due in considerable measure to our own administration's foreign policies. Through huge extensions of credit, primarily to Great Britain, it has made it possible for the British, the French and the Italians to bid up the prices of wool in Australia, South Africa and South America above the floor prices already established. Those wool buyers on the continent of Europe whose own finances were insufficient have operated on credits granted them by Great Britain.

They have bought chiefly fine wools in contrast to their historic practice of using larger quantities of coarse wools. A large percentage of the tops, yarns, and fabrics made of these wools has subsequently gone to Great Britain, to be sold in the world markets as British products. The balance is being offered by foreign mills largely as exports to South American countries, who, lacking dollar exchange, have a virtual embargo on American textiles.

We therefore have the almost incredible situation where our own dollar credits make it possible for competitor nations to increase world wool prices to such an extent that American buyers hesitate to buy in the world wool markets. Thus our own government, by following a policy which has permitted loans without restrictions or designated end uses, has made it possible for a virtually bankrupt Europe to outbid the solvent United States.

Labor Costs

Ever since 1932, the government has encouraged increased wages and higher labor costs. In the very first year of the Roosevelt administration under the National Recovery Act, manufacturing costs were increased by prohibiting the operation of a third shift in the woolen and worsted textile industry, thereby decreasing potential production and increasing costs in individual mills. Simultaneously, wages were increased and minimum wage levels were established by government fiat. Ever since then, countless agencies and a long succession of executive orders, regulations and laws have progressively contributed toward the constant rise in production costs.

Between 1940 and 1945, the United States participated in the most devastating war the world has ever seen. Since all wars have resulted in inflationary tendencies, it is not astonishing that prices for all commodities and manufactured products have advanced.

However, the rise in labor rates and the price of wool show their greatest increases prior to World War II and in the two years after the war. In both instances, they were deliberately encouraged by our own government policies. They are obviously out of all proportion to the relatively conservative increase in the selling price of the finished product of which they are the chief ingredients.

Aside from the two chief component cost items in a fabric, other raw materials such as coal, dyestuffs, chemicals and other essentials have increased in price, due largely to the inflationary policies inaugurated by the government more than fifteen years ago. At the same time, the present tax program has, of course, still further contributed toward increased manufacturing costs.

I certainly do not advocate a return to the low wage levels of the depression, nor do I feel that wool prices should return to the levels of the early 1930's. However, there is a palpable injustice in first encouraging increased costs and then viewing the resultant price increases of manufactured consumer goods with an alarm which overlooks the very facts that have caused them.

While one may view with pardonable pride the social and economic gains of labor, as well as the higher prices guaranteed to farmers, it is hardly consistent to condemn the inevitable results of a policy which for fifteen years has been consistently inflationary.

Under our present system, we have little control over the cost of the chief raw materials which go into our product, since they are maintained under government support programs. The accompanying Corporate Cost of Living chart shows that from 1932 to 1947 the cost of these raw materials has gone up by 180%.

Under an administration policy of encouraging increased wage rates, we have little control over the price of labor. During the past fifteen years, our wage rates have increased by 171%.

We have little control, except expert care and good judgment, over the higher prices we are forced to pay for supplies purchased from other producers who have had to increase their costs for substantially the same reasons we have been forced to increase our prices.

Finally, we have no control

whatever over the taxes we pay, since the tax program is one which has been retained as an administration policy contrary to the stated wishes of Congress.

Selling Prices

In establishing selling prices, however, there is one factor over which we have absolute and complete control. This is our own mark-up, representing the difference between the standard manufacturing costs and selling prices for fabrics, arrived at in a consistent manner in accordance with customary accounting practice.

The Forstmann Woolen Co. makes the unqualified statement that its mark-up from standard cost to selling price is less than one-half as much today as it was in the depths of the depression of the 1930's and is, furthermore, less today than was permitted under the fabric price ceilings imposed on the company during the operation of the Office of Price Administration.

The selling prices of our finished product have only increased by 75% during a fifteen year period in which labor costs advanced 171% and raw material costs advanced by 180%, with a sympathetic rise in the cost of other supplies necessary in the manufacture of our product. (See chart.)

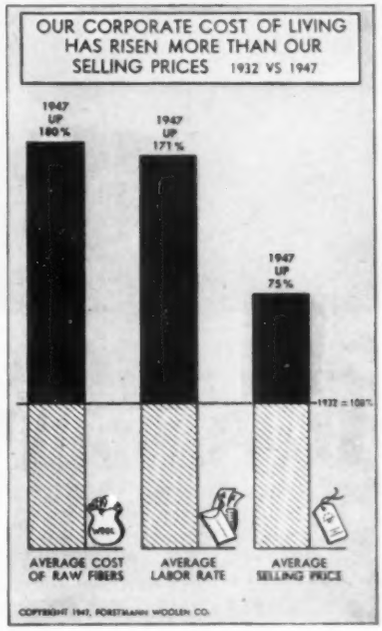
From these figures, it is quite clear that the company has made every effort to counteract, as far as it is possible to do so, constantly rising costs brought about through direct governmental policy.

Far from withholding textile production with which the industry has been charged, the Forstmann Woolen Co. is operating on a twenty-four hour, three shift basis, six, and partially seven days a week, and it is producing and shipping by far the greatest yardage in its history. A fair return on money invested has been made possible by an unprecedented volume and not by undue mark-ups.

The Remedy

The remedy for the admittedly critical phase of an inflationary period does not lie in condemnation of industry, which is producing to the utmost to close the gap between supply and demand. It resides in the policies of our own government which controls and directs those physical factors of taxes, credits, farm and other subsidies, wage policies, and foreign loans and grants—all of which are a direct charge upon production and distribution over which industry has absolutely no control.

Nowhere else in the world is there any comparable effort by industry as a whole to increase production capacity and lower costs through huge investments of capital in new buildings and equipment, experimentation, and economies in all phases of operation.


OUR CORPORATE COST OF LIVING HAS RISEN MORE THAN OUR SELLING PRICES 1932 VS 1947
1947 UP 180%
1947 UP 171%
1947 UP 75%
1932 = 100%
AVERAGE COST OF RAW FIBERS
AVERAGE LABOR RATE
AVERAGE SELLING PRICE
COPYRIGHT 1947, FORSTMANN WOOLEN CO.

So far, this statement has dealt with the relatively better values the consumer is now enjoying, but we have not yet discussed the vital question of corporate income. It is obvious that even at much reduced mark-ups, a fair return on capital invested is possible, providing, of course, the volume remains very substantial. In the case of the Forstmann Wolen Co., the reduced mark-up system under which we are currently operating has increased by more than 50% the volume of business we must do in order to just break even. In other words, under our present close mark-up, if our volume fell off to anywhere near our prewar rate, the company would run into a heavy deficit.

Every company engaged in business has a *Corporate Cost of Living,* just like any individual person. During the war, it was impossible to replace or even adequately repair machinery, equipment and buildings, which were being operated and worn out at an unprecedented pace. The *Corporate Cost of Living* of making these repairs and replacements has now increased to a greater extent than has the Bureau of Labor Statistics' Cost of Living Index for an individual.

The price of textile machinery has increased from 200% to 300%. and the cost of industrial construction to replace obsolete structures has increased by about the same ratio.

Because of these facts, after taking account of normal repairs, maintenance and depreciation, it has been necessary for the Forstmann Woolen Co. to spend and to appropriate 86% of the company's total net income after taxes for the post war years 1945 through 1947 for machinery replacement and modernization. This money is not being spent to enlarge production facilities, but it will enable the company to manufacture still better goods at still lower prices.

Reasonable Profits Essential

It is highly desirable and, in fact, absolutely necessary for corporations to make reasonable profits at this time, providing these profits are not made through unreasonable price structures.

If we did not have income, which, in turn, can be reinvested in new machinery, buildings and equipment, we would soon deteriorate to the point where we could no longer be competitive.

The ability to invest money in new machinery and new methods is the only way to cut production costs and, therefore, selling prices in the future. It is the only way in which to further counteract the continued increase in costs of raw material and labor. At the same time, such modernization will assure a stable, long term employment throughout the country.

Processing Records Prove Value

By HORACE L. PRATT

AS THE PHYSICIAN examines the daily chart of his patient as prepared by the nurse, so must the superintendent check the "pulse rate," "temperature" and general condition of the mill as indicated by daily reports.

A certain number of reports are made by each department of the mill and by the main office. Records are kept showing production, cost, waste, labor turnover, accidents, and maintenance. The time and expense involved in making and filing these reports and records are justified only if such reports and records can be utilized in reducing cost, waste, or accidents and in increasing production. If records are made simply to be looked at one time and then filed to gather dust, the time and effort spent in preparing them has been wasted.

Importance of Daily Reports

Daily reports are important and we believe that their greatest value lies in their long-range application. For example, a certain card may be producing sliver, which because of a poor picker lap may show a great amount of variation. While this would show on the current report it would cause little concern unless, after repeated tests over a comparatively long period, the card continued to have a high variation factor. Definite remedial action would then be indicated, and steps should be taken by the proper authorities to correct the conditions causing the irregular sliver. It can thus readily be seen that the person in charge of the laboratory records must keep these records in such a manner that they will be readily available for reference and comparison.

Reliability of Reports

Before undertaking a discussion of any system of record keeping we should like to consider the reliability of the reports and records. Before any test report is accepted at face value, especially by the older foremen in the mill, these foremen must be pretty well convinced that the technicians making the tests and reports know

what they are doing and that the technicians are conscientious enough to perform the tests fairly and impartially. They will overlook an honest mistake, but once they feel like the laboratory is trying to put something over on them they may become suspicious of any and all test reports.

Permanent Filing System

Most test reports are usually made out in considerable detail. This is necessary for proper completion of the report and for assuring accuracy. The detailed calculations take up space and the files soon become filled, making long range comparisons difficult. It was for this reason that we adopted a "permanent" filing system for our laboratory, discarding all but the essential data necessary for future reference. Not only did we save space in the filing cabinets, but data on previous tests could be located very quickly and could be assembled without having to handle a mass of papers.

The first step taken in the designing of our permanent filing system was to determine which type of tests would best fit into such a system. We decided to start with one test or group of tests which were closely related, eliminate the undesirable qualities and continue the work on other types of tests.

For some time we had been making control tests on cards. These tests were as follows: sliver weight control, sliver linear regularity, and flat strip weighings. All three tests were made each day at the rate of six cards per day. All of the old tests were filed and were taking up a lot of space, so we chose the cards as the logical place to begin our permanent records.

The next step was to determine the size of the card, for cardboard would be about the only thing that would stand repeated handling. A full letter-size card was decided upon, enabling us to use our present filing cabinets to full advantage, as well as providing space for a comparatively large number of entries. The design of this filing card is illustrated in Fig. 1.

The information which is entered on the card is taken from three different reports. The weight per yard is taken from one report, factor of quality from another, and weight of flat strips from still another. The average results on each of these reports are entered on one line, together with the other information required. Space is provided for 80 entries; therefore the results from 240 report forms can be entered on the one permanent filing card.

The back of the card is blank but this does not mean that it is not used. We are recording the dates that the cylinder, doffer, and/or flats are clothed and the make of the fillet. Other pertinent information is to be added from time to time. Think what a fine record we will have in two or three years. On one form there will be a complete history of important changes and alterations of the card and of its performance during the entire period.

Someone might ask what we do with the original reports. Entries are made on the permanent filing card daily; however, the reports from which these entries are taken are filed and are kept for three months. Around the first of each month we discard the oldest reports, keeping the reports for the past three months for reference in the event someone wishes to check the variations on the tests which are represented by the averages on the permanent record.

Evaluation of Records

As a further aid in the evaluation of this permanent record it will be noted that spaces are provided for recording the stock being run at the time the test was made and the draft gear and production gear being used on the card. In most mills the various stocks in process are usually designated by either letters or numbers. Obviously the value of this record is greatly enhanced if these

Laboratory Blank Mills—Permanent Filing Card——————(Drawing)

FRAME NO. 21

Standards			60/64	Below 15.0	36	58/62		Standards							
Date	Doff's No.	Stock	Wt. Per Yard Grains	Factor of Quality	Draft Gear	Tension Gear	Remarks	Date	Doff's No.	Stock	Wt. Per Yard Grains	Factor of Quality	Draft Gear	Tension Gear	Remarks
7/25/45	1	AZ	69.7	13.9	36	60									
"	2	"	62.5	12.9	"	"									
8/27/45	3	"	60.8	13.2	"	"									
"	4	"	60.3	15.5	"	"									
10/2/45	5	"	61.0	13.6	"	"									
"	6	"	63.1	13.8	"	59									
11/7/45	1	"	63.3	13.5	"	"									
"	2	"	61.2	13.5	"	"									
12/6/45	3	"	60.6	12.6	"	60									
"	4	"	61.9	14.3	"	"									
2/13/46	5	"	61.2	13.7	"	"									
"	6	"	63.2	12.9	"	"									
3/22/46	1	"	60.7	14.3	"	"									
"	2	"	65.5	13.6	"	"									
4/24/46	3	"	62.9	17.0	"	61									
"	4	"	62.9	17.3	"	"									
5/28/46	5	"	64.3	14.9	"	"									
"	6	"	62.5	15.4	"	"									
6/25/46	1	"	63.5	12.0	"	"									
"	2	"	61.4	14.2	"	"									
8/7/46	3	"	65.0	14.6	"	"									
"	4	"	62.8	14.0	"	"									
9/10/46	5	"	63.4	14.9	"	60									
"	6	"	63.3	12.1	"	"									
10/15/46	1	"	60.7	13.1	"	"									
"	2	"	60.4	12.5	"	"									
11/22/46	3	"	62.3	12.0	"	"									
"	4	"	62.7	12.0	"	"									
12/26/46	5	"	62.7	12.8	"	"									
"	6	"	57.9	12.6	"	"									

Fig. 2

Laboratory Blank Mills—Permanent Filing Card——————(Carding)

CARD NO. 81

Standards			59/58	Below 10.0	24 & 30 S	13	25		Standards							
Date	Stock	Wt. Per Yard Grains	Factor of Quality	Wt. of 10 Flat Strips Grains	Draft Gear	Prod. Gear	Remarks	Date	Stock	Wt. Per Yard Grains	Factor of Quality	Wt. of 10 Flat Strips Grains	Draft Gear	Prod. Gear	Remarks
8/26/44	AZ	53.3	10.8	236	13	25									
10/13/44	"	57.0	9.7	249	"	"									
11/29/44	"	56.2	10.4	226	"	"									
2/10/45	"	59.7	9.5	259	"	"									
1/12/45	"	59.4	8.3	271	"	"									
4/19/45	"	57.4	9.1	259	"	"									
5/29/45	"	55.2	14.1	243	"	"									
7/17/45	"	59.0	11.5	214	"	"									
9/25/45	"	52.9	5.2	272	"	"									
11/1/45	"	59.5	7.4	289	"	"									
12/26/45	"	55.1	5.3	301	"	"									
2/21/46	"	55.4	9.1	215	"	"									
4/11/46	"	59.7	10.7	261	"	"									
6/24/46	"	59.5	11.3	204	"	"									
9/17/46	"	57.1	10.5	278	"	"									
10/31/46	"	58.7	10.9	275	"	"									
12/17/46	"	57.9	11.7	313											

Fig. 1

Laboratory Blank Mills—Permanent Filing Card——————(Spinning Ends Down)

FRAME NO. 105 DIA. RINGS 2½"

Date	Yarn No.	Stock	Hank Roving	*Ends Down	‡Bobbin of Rov. Creeled	Date	Yarn No.	Stock	Hank Roving	*Ends Down	‡Bobbin of Rov. Creeled	Date	Yarn No.	Stock	Hank Roving	*Ends Down	‡Bobbin of Rov. Creeled
12/1/44	8	A2	.90	47.5	82												
2/28/45	8	"	"	35.9	79												
5/17/45	8	"	"	26.6	85												
7/1/45	8	"	"	28.9	89												
11/6/45	10	"	"	28.9	52												
1/25/46	10	"	"	32.4	45												
3/7/46	10	"	"	37.0	57												
4/15/46	8	"	"	55.6	92												
6/3/46	10	"	"	24.3	60												
7/30/46	13	"	"	30.9	35												
9/4/46	13	"	"	45.6	37												
10/30/46	13	"	"	27.8	64												
11/21/46	13	"	"	52.4	51												
1/6/47	13	"	"	40.5	44												

Fig. 3

*. ENDS DOWN per 1000 Spindle hours

‡. No. of bobbins of roving creeled during a test period of eight hours

stock designations are used consistently so that any specific stock will always be essentially the same mix.

At the top of the card, spaces are provided for the various *standards*. It should be remembered that when we began using this permanent record we had been making control tests for quite some time and *standards* had already been adopted. However, we may find later on that the present standards are no longer applicable. In that case we would simply insert the *new standards* in the spaces where the tests would ordinarily appear, with the date and a note of explanation. If no standards have been adopted, tentative standards might be used or the spaces might be left blank until sufficient data has been accumulated to determine the correct standards.

Records on Drawing Frames

The next group of tests to which we applied this permanent filing system was that made on drawing frames. This card is shown in Fig. 2. Our schedule of testing calls for two deliveries from each of three heads per day, so two entries will be made each day. Some mills test only one delivery each day, so in that case only one entry would be made. The information required is very similar to that on the card, except there are no flat strips and no further explanation seems necessary. The back of the card can be used for recording any pertinent data, for example, new trumpets installed, changes in type of drawing rolls, etc.

Records on Spinning

We next applied our permanent record system to spinning ends down tests which we had been making for several months. The form used for these tests is illustrated in Fig. 3. It is, of course, necessary to show the yarn number, the stock, and the hank roving being run. For information in determining work loads we had the person making the ends down test to make a record of the roving creeled while the test was being made. These tests are made by spinners' jobs. That is, one spinner is checked at a time, and no spinner who has a learner or spare hand is checked. The number of ends down as shown on the card is the number of ends down per 1000 spindle hours, and is figured as follows:

$$\frac{\text{Actual No. of Ends Down} \times 1000}{\text{Length of Test} \times \text{Spindles per Frame}} = \text{No. of Ends Down per 1000 Spindle Hours}$$

Example: During a test lasting eight hours there were 40 ends down on a frame having 216 spindles. What was the number of ends down per 1000 spindle hours?

Solution:

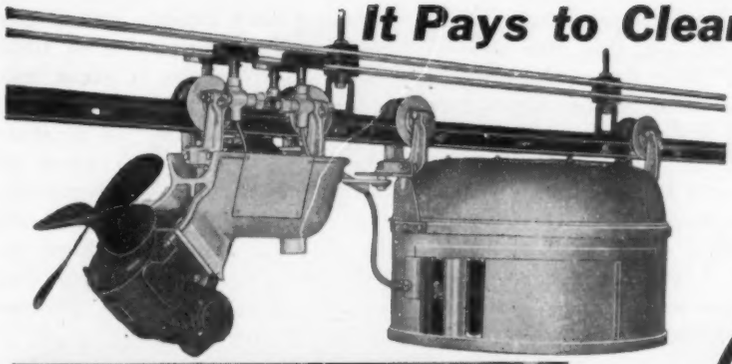
$$\frac{40 \times 1000}{8 \times 216} = \frac{40{,}000}{1728} = 23.14 \text{ Ends Down per 1000 Spindle Hours}$$

The amount of roving creeled might be figured on the same basis as the number of ends down and by the same formula, however, for our purpose we simply record the actual amount of roving creeled during the period of the test.

On the reverse side of this permanent record card may be listed essential data which may be of value in properly evaluating the record over a period of several months. Some of the facts which might be included are: any changes in make or type of travelers, overhauling dates, dates new rings are installed or rings turned, data on various types of roll cots being used, changes in type of bobbins, or any other information that might affect the running of the work.

We have about perfected plans to record our daily yarn tests, weight, and break on a permanent record form. Instead of making this record by frame number we

It Pays to Clean . . . . Automatically



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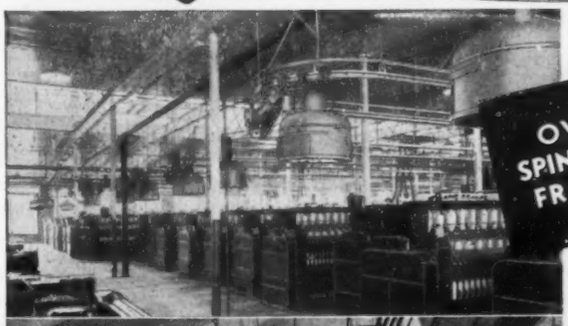
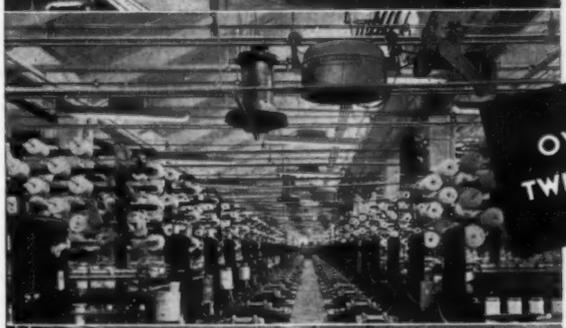
AMERICAN MONORAIL

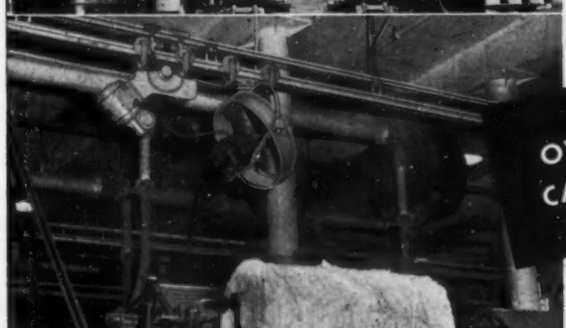
Automatic Cleaners



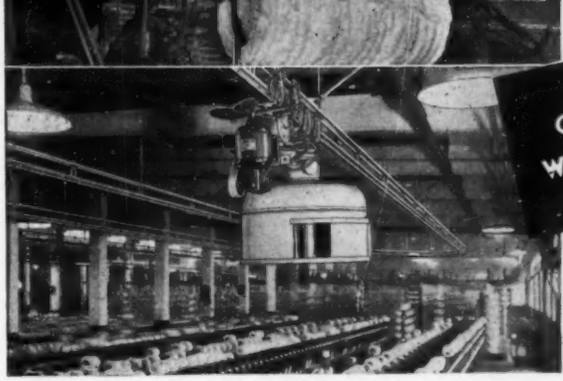
Overhead travelling cleaners not only keep frames clean but also send a blast of air toward ceiling, eliminating hand cleaning of overhead equipment.



A swirling column of air circulates freely through twister creels to eliminate breakage due to lint accumulation. Low headroom blower overcomes unusual ceiling conditions over high creels.



Card room ceilings are notoriously hard to clean. A high velocity column of air from a travelling fan directed against the ceiling prevents accumulation of fly on ceiling equipment.



High speed operation of winders can be greatly retarded by excessive lint. By preventing any accumulation on these machines maximum production is assured.

Let an American MonoRail Engineer explain the advantages of Automatic Cleaning. Send for illustrated catalog "Automatic Cleaning and Overhead Handling for Textile Mills."

THE AMERICAN MONORAIL COMPANY

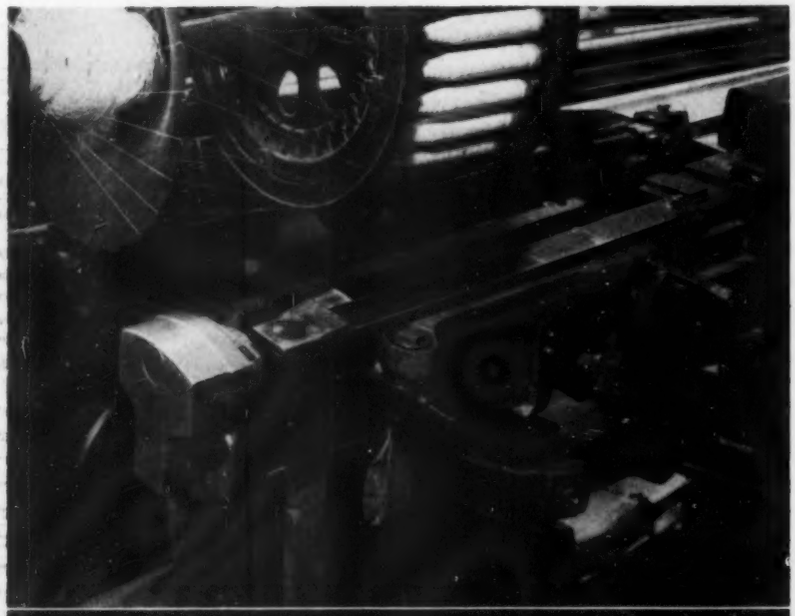
13106 ATHENS AVENUE — CLEVELAND 7, OHIO

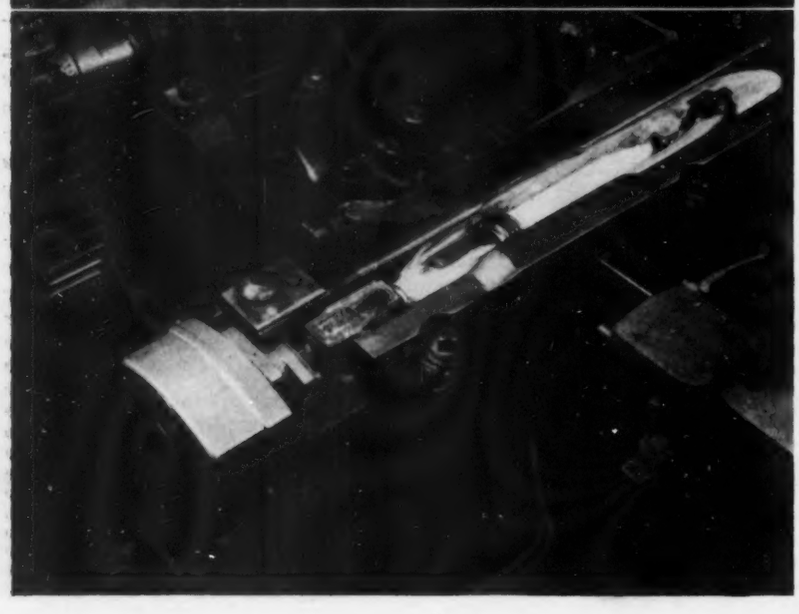
will record the tests by yarn number and by ring diameter. To avoid so many entries on each card, our plans are to average the tests made each week and to make one entry per week under the date of the *week ending*. After a period of time we should have a good comparison of the breaking strength on the various sizes of rings.

The permanent record system can probably be extended to other types of testing, for example, picker lap tests. In this case we will probably secure the blank cards and rule them off by hand since we have only a few pickers, and the cost of printing a dozen or so cards would be prohibitive. Fabric tests can doubtless be recorded on this type of filing card and possibly other types of tests will lend themselves to this system of permanent filing.

As we have already stated, any type of filing system is of little value unless there is some improvement in the quality of the product, an increase in production, or a reduction in waste or cost, but once the overseers realize that pertinent information can be had on any machine, on a moment's notice, we believe that one or more of these objectives will be attained.

Hydraulic Shuttle Check



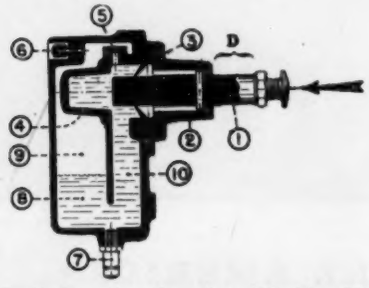


THE MECHANISM mounted on the lay end in the accompanying photographs is a patented device which acts as a buffer for the shuttle. Before the picking motion acts, the piston carried in its bearing is in its most forward position. The housing and the cylinder are filled with oil as a result of the combined action of the air suction valve and the to-and-fro motion of the piston.

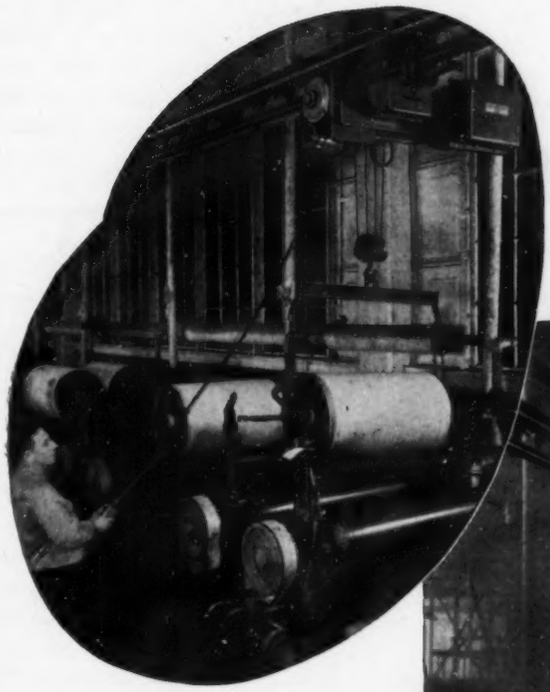
When the shuttle hits the picker on the opposite side of the loom, the moving portion of the shuttle-picker-piston group travels a distance equal to the course of the piston. The oil in the cylinder offers to the piston a resistance proportional to its speed. Thus, the shuttle will always stop at the same spot of its speed at time of impact.

The shuttle is held in this furthermost position by the swell until the next blow, which throws the shuttle back. Then the released piston returns to its original position by the action of compressed air on the level of the liquid. The attachment is intended to increase loom speed.

The device has been patented by Zama Chur (Switzerland).



Vertical section through a Z-Buffer. (1) Piston; (2) bearing; (3) collar; (4) cylinder; (5) air suction valve; (6) relief valve; (7) admission valve; (8) oil; (9) compressed air; (10) junction canal; (D) piston stroke.



Handles Rolls into DYEING JIGS IN ¼ NORMAL TIME

Makes Hard Dangerous Job Easy, Fast, Safe and . . . Pays for Itself in Less Than One Year

23 dyeing jigs in operation 24 hours a day served by Cleveland Tramrail system. The motor-driven carrier with electric hoist picks up the rolls in storage, delivers them to the jigs and sets them in place.

A Cleveland Tramrail installation in the Jig Dyeing Department of a large mill has reduced a hard job fraught with danger to a simple, easy, safe task, and has cut the man-hours for conveying and lifting rolls in and out of the jigs to one-quarter of that formerly required. The installation has fully paid for itself in less than one year.

Rolls of cloth are taken directly from the storage section to the Dyeing Department without rehandling. A transfer bridge gives complete coverage of the roll storage and interlocks with the two tracks serving the dyeing jigs.

Thus one man can handle rolls from storage to jigs without assistance and the former danger of hernias, mashed fingers, toes, and more severe injuries is eliminated.

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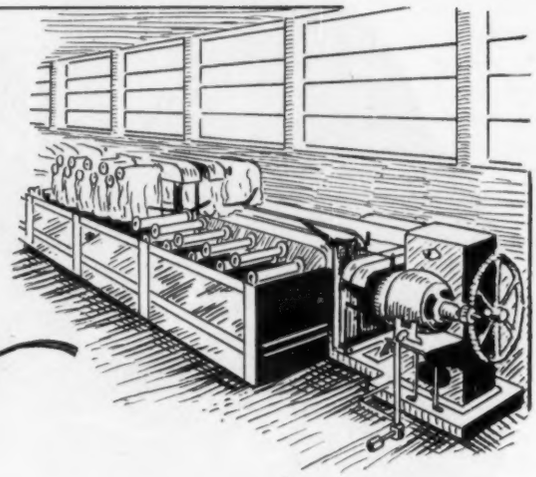
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Rayon Yarn Dyeing



By ROBERT W. JOERGER
Chemist, Franklin Process Co.

THE PREVIOUS article in this series introduced the subject which is covered in detail here. This installment deals with the use and application of direct cotton colors on viscose rayon.

Article 2*

DIRECT cotton colors are used more than any other class of dyes in the dyeing of viscose because their application is simpler and less time-consuming. Often a shade can be produced in 20-30 minutes. However, they have limitations in their fastness properties, so to an increasing extent, faster dyes are demanded for certain fabrics and purposes.

The application of these faster dyes is more complicated and the dyeing procedure is often so long that the quality of the rayon is affected. Therefore, the direct cotton colors are applied whenever their fastness is sufficient to meet the particular requirements of an article.

If one proceeds to dye viscose rayon by the method used for cotton, first entering the yarn into a cold dyebath, then gradually raising the temperature to a boil, and adding salt at intervals, the result may give the observer a shock. The lot is quite likely to be uneven, some skeins may be light, and others dark, even though all the yarn came from one manufacturer.

The Problem of Variation

Even greater variation results from mixed lots or lots from different manufacturers. This unevenness, which cannot be detected before dyeing, is due to lack of uniformity in the making of the viscose, and although the manufacturers have made great progress in overcoming such variations, the problem still exists for filament yarns. In staple yarns, which are cut and thoroughly mixed before spinning into yarns, the blending is sufficient to make the differences difficult to detect.

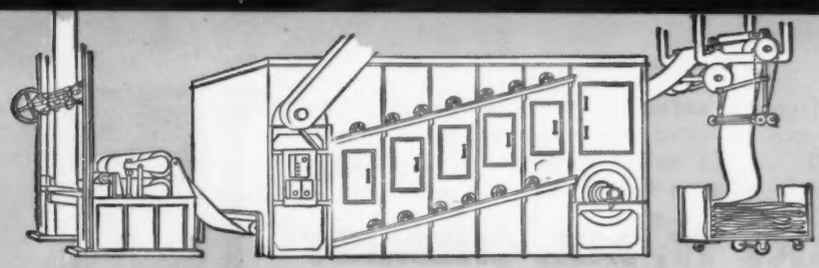
Another approach to solving the problem was the marketing of special types of direct dyes that tend to overcome the contrast of light and dark places in the yarn. Some of these are: Benzo viscose (general), Rayon (DuPont), Visco (Sandoz), Rigan (Ciba), etc. The intelligent rayon dyer, by selecting proper dyes and controlling his dye application, can overcome or minimize these difficulties. We shall now examine some of the lessons learned by experience.

Apart from the innate differences in a batch of filament rayon, the greatly increased affinity viscose has for these dyes may result in unevenness due entirely to faulty dye procedure. All the yarn should have the same contact with the dyebath as quickly as possible. Skeins must be uniformly wet out and turned rapidly at the start so that the parts first immersed do not dye deeper. Packages must be of such size and softness that unequal dyeing, heavy on the outside and light within, due to rapid exhaustion or insufficient reversal of flow, does not happen. The time element is much more critical than with cotton yarns.

Important Factors to Consider

Control of temperature and the addition of salt is extremely important. In general, higher temperatures are favored as most direct dyes level off any initial unevenness better near the boil. The

*Article 1 of this series appeared in the January 1948 issue.



In the first section of the Butterworth Continuous Dyeing Range, goods enter a 2-roll padder in which the color is applied in pigment form, followed by drying on a special type air dryer.

Cut Dyeing Costs on Vats and Sulphurs

Get ready to sharpen your pencil and refigure your dyeing costs on vats and sulphurs. Here are facts about the Butterworth Continuous Dyeing Range based on actual mill installations.

Butterworth Pad Steam Range Vs. Jig Dyeing

1/3 Floor Space

Complete pad steam range requires space only 110 x 10 feet to run 6,000 yards per hour. To produce same yardage by jig method requires 3,250 sq. ft. of floor space for vat colors, 2,800 sq. ft. for sulphurs.

2/5 Labor Cost

Pad steam range requires crew of four men plus part-time color weigher and mixer—36 man hours on 8-hour shift. To produce same yardage on vat colors by jig method requires 100 man hours on 8-hour shift . . . 88 man hours on sulphurs.

Savings on Chemicals, Dyestuffs

Chemical costs are cut an average of 40% with the pad steam range. Color costs are equal, or up to 25% less on certain classes of goods. In addition you save the cost of jig leaders . . . get better output because there are no jig ends to trim back.

It takes only two pads, a hot flue dryer, a steamer and a compartment washer to give you a complete 2-stage range for both vat and sulphur colors. Compare this with 24 jigs required to produce an equivalent yardage on jig work . . . plus roll benches for storage and in the case of vat colors a pigment padder. For a comparison of pad steam vs. jig work, see figures at left.

If you are doing *conventional* continuous reduced or pigment work, consider these facts. The Butterworth pad steam range will cut your costs from 10% to 35% on both vat and sulphur colors. On vat colors you will get deep shades which formerly required the use of jigs. On sulphurs, pad steam dyeing gives full jig money value and fastness, and shading is controlled throughout the run.

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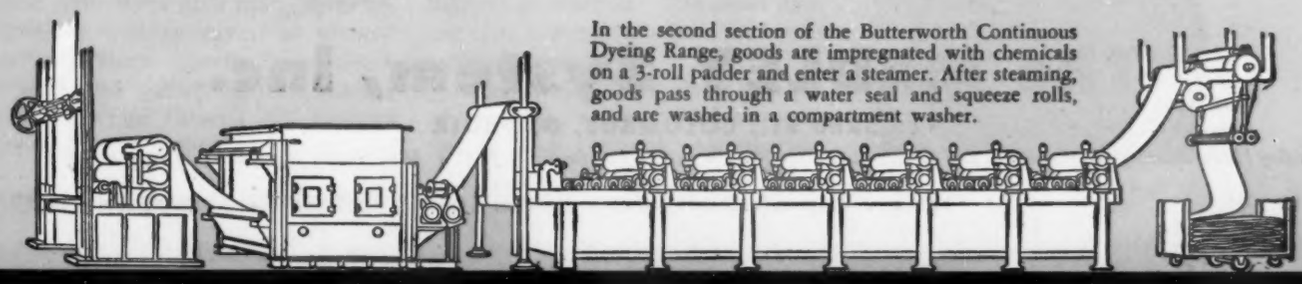

In the second section of the Butterworth Continuous Dyeing Range, goods are impregnated with chemicals on a 3-roll padder and enter a steamer. After steaming, goods pass through a water seal and squeeze rolls, and are washed in a compartment washer.

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Medley will draw it!

. . . . AND PRODUCE A BETTER SLIVER!

Few companies in the Textile Industry are more conscious of the necessity for constant research and experiment than Medley. The effort to improve, improve, improve, is unending!

Out of this constant striving to attain the best has come Medley Drawing—producing a *better sliver* from cotton, from wool, from ramie, from synthetics, from blends . . . a drawing frame that can be adjusted to take any fiber in any staple length from 5/8 inch to 13 inches. Medley Drawing is doing that every day in mills throughout the industry—the result of research and experiment in sound engineering principles.

Out of experiment at Medley, among many other things, have come such major improvements in the drawing process as the Medley sealed-in ball bearing metallic top roll with permanent lubrication—the quiet helical gear drive. Result? A more uniform, grease-free sliver.

Yes, Mr. Chemist, do your best. Meanwhile, Medley Drawing will go on producing a better sliver from any and all of the fibers in use today. That's why more and more mill operators with problems in production are calling on Medley for the services of trained mechanical and textile engineers. It pays.

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***Medley Salutes the Textile Researchers**—in cotton—in wool—in synthetics, for their endless efforts to improve the products and processes in America's great textile industry. In their test tubes are the fibers and the fabrics of tomorrow...each one a challenge to the ingenuity and ability of those who will make the machines to process them. Medley proudly accepts the challenge.*

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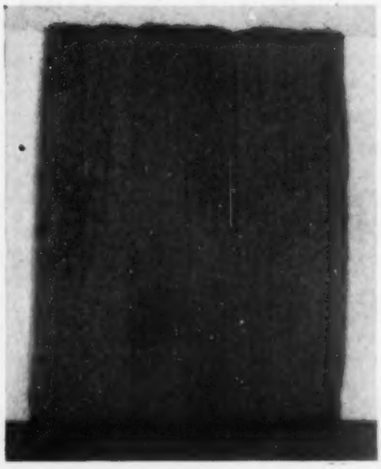


Illustrating temperature range test results. Shown here from left to right are samples of viscose yarn dyed with Sky Blue 6B at temperatures of 120°, 160°, and 200° F., respectively.

high affinity of viscose suggests the use of less salt and care in adding it. Larger volumes of dye liquor to yarn and avoiding crowding are also helpful.

If there is any doubt in the mind of the dyer as to where the cause of unevenness in a dyed lot lies, it is suggested that he strip off the color from a sample of the lot and carefully re-dye it. A knitting of the uneven yarn, perhaps marking certain stripes for future observation, is the best procedure for this purpose. If the defects show up again in a similar way, they may well be caused by variations in the manufacture of the yarn rather than carelessness in the dyehouse.

Even Dyeing

Since control of the dye affinity of viscose is such an important factor, the selection of dyes which give more level results is profitable and the knowledge of the habits of the unlevel types is necessary for their proper use. Some of these have desirable shades or possess better fastness properties, i.e., to light or washing, so their commercial use cannot be avoided.

Fastest Dye Gives Best Results

From the beginning it was noted that some dyes give more level results on viscose rayon of uneven affinity than others. These penetrated the yarns better, leaving fewer white places in twisted yarns, tight places, selvages, and other parts difficult to reach. Paradoxically, those which dyed the quickest produced the most level results; they penetrated more easily and deeper but also came off again in the dyebath to move to the less dyed portions, indicating greater mobility. The slower dyeing types tended to remain more fixed where they first hit and leveled poorly during the usual dyeing time.

An empirical method of testing for this property is made by soaping a dyed skein with an equal portion of white rayon and then noting how much color comes off to stain the white. The poorer colors do not come off readily and merely tint the white, while the best lose considerable color, sometimes enough so that the white becomes the same depth of color as that of the original dyed skein.

Samples of viscose yarn dyed with Black L at 120°, 160°, and 200° F. High temperature induces penetration of dye.

Another easy test to perform in any dyehouse laboratory is the dyeing of the various colors on viscose yarn over a range of temperatures, say at 120°, 140°, 160°, 180°, and 200°F., holding all the other conditions in the dyebath the same. Some will dye deeper at lower temperatures while others do not dye well until the highest is reached. The level dyeing type always falls into the lower temperature group.

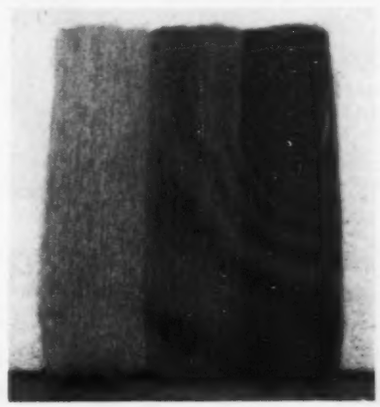
Later explanations show that the unlevel type needs the higher temperature to induce penetration, whereas the smaller, more mobile particles of dyes in the other extreme do not. Generally, all direct dyes for rayon level better at higher temperature. Some rayon dyers enter their yarn in a hot dyebath and continue the whole dyeing operation near 200°F.

About twelve years ago, a careful experimenter in England published some measurements of the rate of dyeing on viscose of over one hundred direct dyes. This classified list, compiled after much laborious work, showed that some dyes colored the yarn completely in a matter of seconds, but others kept dyeing the yarn deeper for hours. The difference between the quickest and the slowest was in the ratio of 1:3700. No wonder that some dyes get places fast while others take their leisurely time but don't get to some places at all!

Recently, studies were made to determine the dyeing affinity of all the various commercial sizes of viscose rayons. The rate of dyeing between these extremes varied as 1:3 when rapid dyeing dyes were used, and as 1:7 with the slower ones. The dye rates of commercial dyes varied as 1:3700, which indicated that the direct colors are extremely more variable in their dyeing properties than the rayons to which they are applied. An investigation of their ability to penetrate within the viscose fibers, showed a tremendous difference. The fastest was 100,000 times faster than the slowest.

As may be expected, those dyes known to have level-dyeing prop-

Chloramine BLL was used to dye these samples of viscose yarn at 120°, 160°, and 200° F., respectively.



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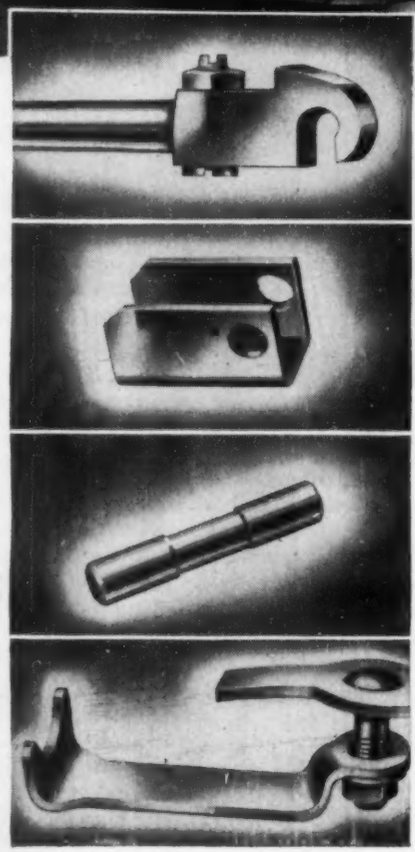

NOW, with four tested improvements in mechanical design, this U S Paterson Tension Shuttle will help to eliminate "smashes" and "seconds", and reduce excessive shuttle maintenance costs.

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erties are found at the beginning of the list, and the unlevel types are found at the other end where the rate of dyeing is much slower. Other dyes, having intermediate properties, fall in between these two extremes in their proper places. The list becomes useful not only in selecting suitable dyes but is extremely valuable in choosing partners for mixtures necessary in compounding shades. It is obvious that if mixed haphazardly the result can only be unsatisfactory.

Choice of Mates Important

A fundamental rule of dyeing with mixed dyes is to choose those that work well together, not on the basis of color, but on their affinity and dyeing properties. From this list, it is possible to select adjacent dyes in compounding a shade, or at least to avoid mixing the extremes. Thus, it was found better to use the same types together with an intermediate.

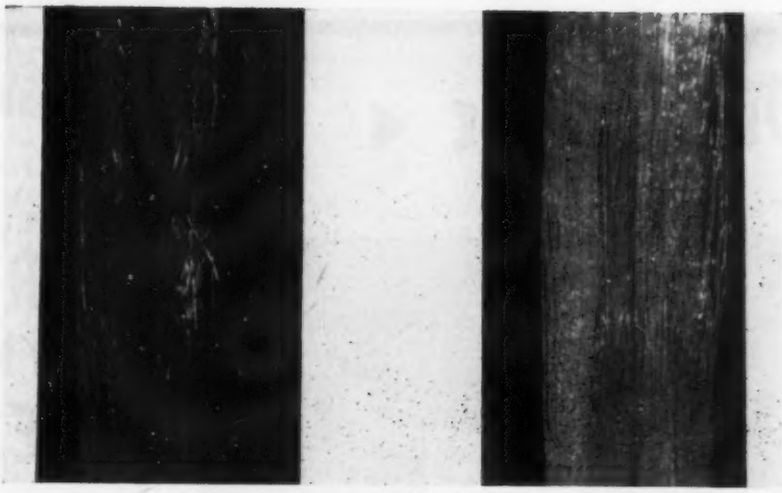
A particular shade of fastness desired sometimes dictates mixtures that are better to avoid, so by choosing the dyes nearest alike in dye rate, commercial requirements can be met with less difficulty.

Source of Information

The reader can peruse a longer list of 186 dyes in the Journal of the Society of Dyers & Colourists on pages 14-15, Jan. 1944. The author explains at considerable length how the use of this information can be helpful to a practical dyer. One very interesting sidelight was that viscose, in the chemical sense, does not vary in ultimate affinity for any particular dye; that viscose of different affinity takes up the same amount of color when given the maximum chance, though some did this much quicker than others. In commercial practice it is not feasible to dye in such equilibrium and therefore the differences are not given a chance to correct themselves.

The quickest dyes satisfy the unequal rayons in the shortest time within the limits required for practical dyehouse procedure, while the slowest dyes do not.

Since the viscose cannot be changed at this point, and lengthening the dyeing time is undesirable from an economic and quality viewpoint, the best alternative is to resort to dye selection. The procedure mentioned is the most scientific and logical that has come to the author's attention, and its value has been proven by the correct dyeing of millions of pounds of viscose yarn.



Dyed samples of same total weights (respectively) show different dyeing characteristics in the same dye bath. At left, Black L on 150/100 denier filament rayon as compared with 150/30 denier rayon (dark sample). At right, Diamine Orange on different filament deniers, 150/100 (light) and 150/30 (dark).

Physical Properties

While speaking of differences in the physical properties of rayon, an experiment can be made to illustrate this. When two skeins of viscose rayon, one 150/100 and the other 150/30, are dyed together, we do not get the same shade though they are the same (total) size. The one with the finer filaments (1½ denier average) appears to be dyed considerably lighter than that which has five denier filaments. This is true throughout the dyeing until an equilibrium is finally reached, which often takes many hours. Use of the slower types consumes so much time that their employment in regular dyehouse practice might be prohibited.

Comparable Shades Calculated

Because of this time factor, the dyer has to use more dyestuff for the yarn made with the finer filaments in order to obtain a comparable depth of color desired. This can be calculated mathematically. The dye needed by the finer filaments to appear as dark as those larger is in proportion to the square root of their denier number. In this case $\sqrt{\frac{5.0}{1.5}} = 1.83$. Thus, to equal a 2% shade of 150/30, the 150/100 requires 3.66% dye if both dyeings are carried to the same degree of exhaustion.

The explanation of this is relatively simple if we think of it first in terms of a pane of blue-tinted glass, for instance. When cut into four squares they would still be all alike. If three are piled together and compared with the single square in a source of light, they appear several times deeper in shade, though the amount of pigment per unit of thickness has not been changed.

Yarn Variation Put to Use

Although the same amount of dye is present in both skeins, they *appear* to be different because the finer filaments reflect more light. This phenomenon is related to the experiment previously mentioned. This obviously complicates our judgment of the affinity in different rayons when observing the dyeings alone.

The dyebaths must also be studied. Although in general these differences might be considered a disadvantage, they can be put to use. Thus, if spun rayon is blended of filaments different in size (deniers), and then dyed in the raw form, a heather effect can be obtained in a single dyeing if the variation in deniers is large

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Additions to our main plant have increased our facilities for manufacturing. An experimental laboratory for continuous research and development has been installed. This is equipped with miniature machines to establish the results that will be secured with our large machines in actual plant operation.

Section of Engineering and Drafting Department.

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enough to show considerable difference.

The manufacture of stronger and more highly oriented rayon types has brought forth a problem. Dyeing these the same depth as ordinary viscose is difficult because in every case they dye lighter and again the cause may be laid to optical reasons rather than to dyeing affinity or chemical differences.

Control of Temperature and Use of Salt

Although the control of temperature and salt additions during the dyeing of either filament or spun rayon has been mentioned before, it is now necessary to describe these effects in more detail.

Generally, increasing the temperature of the dyebath increases the penetration of the dye, perhaps because the pores of the fibers are more open and also because dye particles become smaller and move more freely.

These two factors work hand-in-hand. The inner parts of the fibers become more accessible and the smaller dye particles penetrate more easily at the time the fibers are evenly covered because of a greater exchange of dye between the dyed and undyed portions. This increase in *diffusion* (as the physicist calls it) is greater with increasing temperature for all dyes. though they differ greatly.

To mention a concrete example: Direct Sky Blue FF diffuses within a viscose fiber twenty times faster at 190°F. than at 120°F. The temperature range test, previously mentioned, was a rough means of testing the diffusion rate of dyes. However, the final exhaustion of a dye is lower at high temperatures, making the use of salt a necessity in most cases.

Careful Regulation Imperative

The purpose of adding salt to a dyebath is to exhaust the color and get as much out of the dyebath and onto the fiber as possible. It is interesting to note that absolutely pure direct dyes will not dye cellulose fibers without the use of an electrolyte. The practice of adding common or Glauber salt in amounts according to the depth of shade and dye bath ratio in cotton dyeing was carried over to the dyeing of rayon. The increased affinity of the latter indicated that more careful regulation of salt additions was necessary.

Some dyes apparently needed no salt for almost complete exhaustion, others needed much less than was required for cotton, while those where considerable amounts were used resulted in slower feeding-on, which produced better results. Careless use of salt gave unlevel results in two respects: (1) the dye was poorly distributed throughout the yarn because of too rapid exhaustion; and (2) the yarn or individual filaments were poorly penetrated, which detracts from the appearance and the fastness properties, such as washing or rubbing. Apparently the dye particles were either agglomerated in the dyebath or collected on the surface of the yarn.

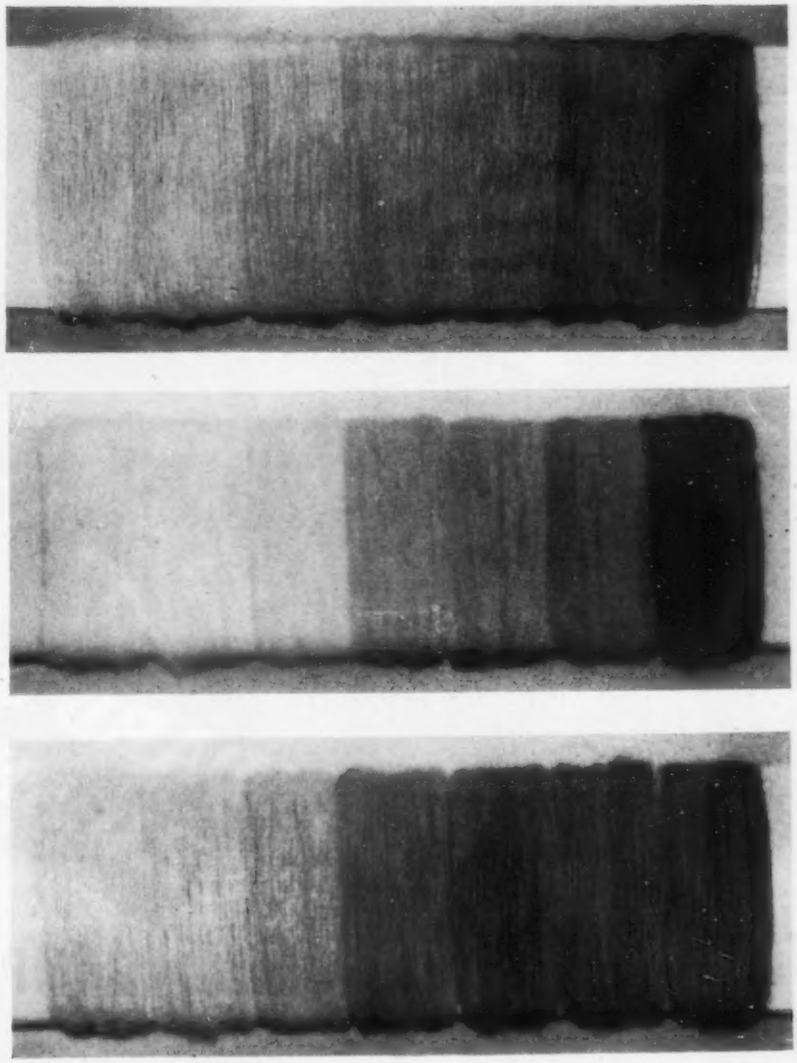
Wide Range of Results

To show the wide range of results obtained from different dyes, we quote the following exhaust figures on viscose for three dyes, all dyed for 20 minutes at 190°F. in a 1:10 dyebath:

Benzopurpurine 4B 91%
Fastusol Grey LVGL 50%
Fastusol Turquoise Blue G 9%

A test method had to be established to get an idea of how dyes reacted with no salt and with gradual additions of the same. Of the many methods available, we quote

Photos below show results of salt sensitivity test. Samples in upper photo were dyed with Black L which is in Group A of the salt sensitivity classification. Center photo shows samples that were dyed with Green BLL which is in Group B. Samples in lower photo were dyed with Benzopurpurine 4B which is in Group C.



After 60 years of service to the Southern textile industry, Standard Oil products are still *first* in point of popularity. There's only one answer. To stay first your product must be *best,* your services *most thorough.* Standard Oil was first to offer special lubricants for textile machinery, and for over half a century these have been constantly improved. The combined facilities for testing and research behind Standard Oil lubricants are unequalled. So, today, Standard Oil lubricants still stand as the *finest.*

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Wherever there are moving parts—from breaker room to weaving shed—there are special types of Standard Oil to afford maximum protection. If you would keep your equipment running at peak efficiency with the least maintenance cost, rely on Standard Oil lubricants.

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just one. Seven two-gram skeins are dyed for 20 minutes at 190°F. in separate pots with and without salt as follows:

Skein	Time (minutes)	% Common salt on wt. of yarn
1	1	0
2	5	0
3	20	0
4	20	1
5	20	2
6	20	5
7	20	20

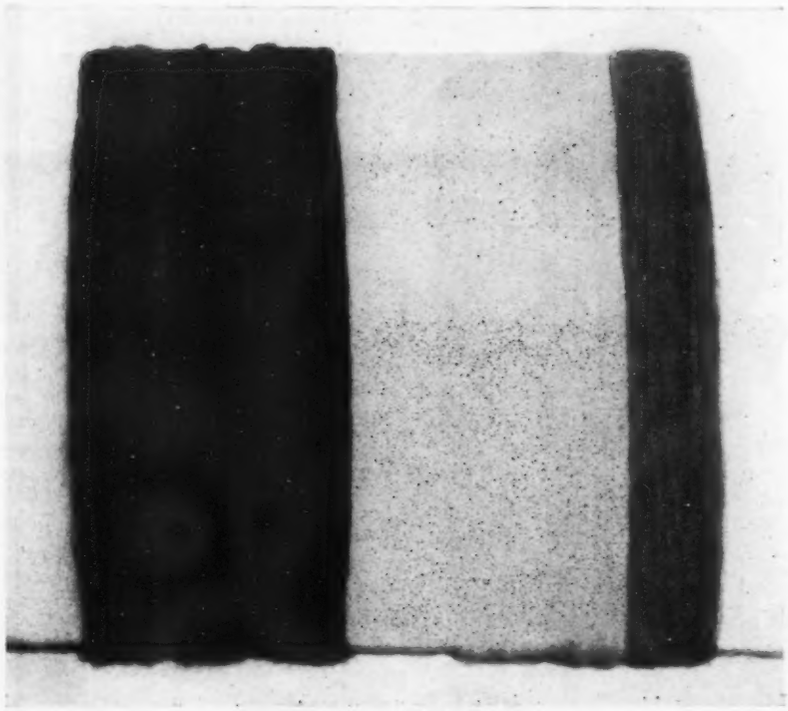
Such a test was performed with a large number of direct dyes and the dyeings were studied with the result that a classification of both the time and salt sensitivity of these colors was obtained. These were then grouped as follows:

Group A, having a high rate of exhaust with little or no salt. This group, including such colors as Chrysophenine, were the more rapid dyeing type that could be dyed at 190°F. with level results, and where salt was added (for heavier depths) careful regulation was not needed.

Group B has a low rate of exhaust and levels poorly, like Chlorintine Fast Green BLL. To get even results, large amounts of salt are necessary. This is shown because the yarn is barely tinted without the use of salt, and the shade gradually becomes deeper from dyeing 4 to 7. The salt must be added gradually because if added too fast, the penetration is poor.

Group C exhausted as rapidly as Group A, but they are extremely salt sensitive. There is a big jump between dyeing 3 and 4. Benzopurpurine 4B is such a color, and for this group both salt and temperature control were found necessary. When dyed at a high initial temperature, the penetration starts before the distribution of the dyestuff is completed throughout the yarn. Therefore it was found better to bring the temperature up from 100°F. gradually and not add salt before 190°F., and then in small amounts only.

The salt sensitivity of some colors in both Groups B & C is such that even the electrolytes in hard water caused uneven dyeings. In other cases, the salts ordinarily used to dilute the dye caused uneven dyeing. To overcome the latter, concentrated dyes, sometimes



The affinity of viscose can be controlled to some extent by the volume of the dyebath. Shown above are samples of yarn dyed with Chlorantine Fast Blue GLL. Dark skeins were dyed with dyebath ratio of 10:1, with 0, 1, and 5 per cent salt (respectively). Light samples were dyed in a 40:1 dyebath with the aforementioned percentages of salt.

2-3 times the normal strength, were marketed. That eliminated at least one factor and gave the rayon dyer a better chance to control the amounts of salt needed. The increase in depth of shade from dyeings 4-7 (see table) will give some indication as to whether or not the salt should be added slowly and to what degree.

Dyebath to Yarn Ratio

Although this method is a test for individual dyes, the results must be integrated to the conditions under which a lot is to be dyed. For instance, the dyebath to yarn ratio in hand boxes is much greater than for machines in which packages are dyed.

To show the importance of this aspect, let us quote another experiment. Chlorantine Fast Blue GLL was dyed in dyebaths having a 40:1 and a 10:1 ratio, in which the following exhausts were obtained:

Amount of salt	Dyebath Exhaust when ratio is	
	40:1	10:1
0	3%	12%
1	8%	58%
5	44%	96%

This again emphasizes our previous statement that the affinity of viscose can be controlled to some extent by the volume of the dyebath. In skein dyeing the dyer has some degree of freedom in this respect; the same does not apply to the package dyer.

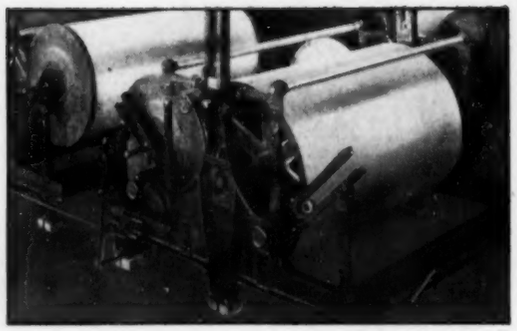
Machines vs. Hand Method

Skein dyeing on hand boxes requires a great deal of care and almost always a machine job is preferred because the skein can then be immersed all at the same time and because mechanical handling is more gentle and uniform than the hand method permits. Although all types of machines can be used, some types are more likely to cause tangles and strains than the rotary roller type.

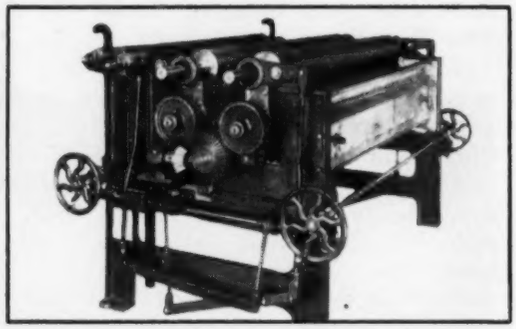
A typical procedure on the machine which cascades liquor over the skeins consists of the following steps: The yarn is wet out for one minute at 190°F. with a soap solution or other wetting agent. The dye is added and the run is limited to 5 minutes. Salt is added and the run is again for 5 minutes,

(*Continued on page* 181)

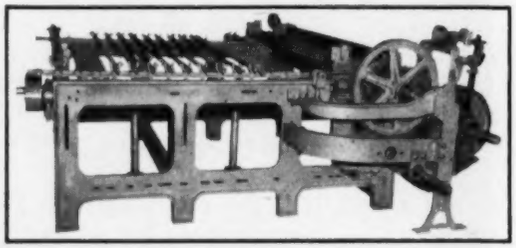
Equipped with 2 cylinders for average work . . . or equipped with 3 cylinders and ball-bearing contact rolls to increase drying surface for heavy work. Heavy copper or stainless steel covered 5' and 7' cylinders insulated. Heavy duty self-aligning anti-friction cylinder bearings . . . self-releasing positive drive.



WHITE CREEL (above) — positively driven — controls yarn stretch; makes sizing faster, more uniform; smooths starts and stops; eliminates breakage and waste. Also available: standard over-under type creel with continuous side rails or extra-height, close-coupled creel for limited space. All creels ball-bearing equipped.



Stainless steel SIZE BOX with extra deep bronze stuffing boxes. Size rolls mounted on ball-bearing journals. Special squeeze-roll lift eliminates strain . . . keeps squeeze rolls accurately positioned over size rolls.



HEAD END, built for single or double beams up to 26", is ball-bearing throughout, either friction or motor driven with variable speed transmission, variable speed single drive, or multi-motor drive. Independent beam wind-up for beams over 26" in diameter.

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Here's a new, improved, mill-tested Slasher . . . combining many special features and equipment . . . that's designed to correctly size the lightest gauze or the heaviest sheeting at top speed and lowest cost.

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WINDING MACHINES — *Principles and Practices*

By JESSE W. STRIBLING

Universal Winding Co.

MAINTENANCE of the No. 50 machine was started in Article 6 and is continued in this article, which covers removing the belt gainer case; use of cam roll gauge; lubrication; and clutch drive maintenance—assembling clutch parts; adjusting the clutch lever; removing clutch assembly; and changing driving pulley.

Article 7

IN ORDER to remove a cam, cam roll, traverse slide, or traverse frame from the No. 50 machine, it is necessary to remove the gainer case and cam shaft, which is all one assembly. The gainer case (belt gain) encloses two gears, which run in oil, and it should seldom be necessary to have to disassemble the gainer case itself, provided the oil level is maintained properly, as will be covered later under LUBRICATION. It is not practicable to disassemble the gainer case in the mill, and if it should ever need replacing, a new assembly should be ordered.

To remove a cam or any of the parts listed, stand behind the machine and proceed as follows:

1. Remove weight, cord, and gainer belt.
2. Remove right hand frame cover (Fig. 43 shows both covers removed).
3. Unscrew stopping lever wheel (A) on front end of cam shaft (right hand thread).
4. Loosen checknut and cam screw (B).
5. Withdraw gainer case (C) from frame, supporting cam with left hand so that it will not drop down after cam shaft is removed and cause the cam roll to fall out and get lost.

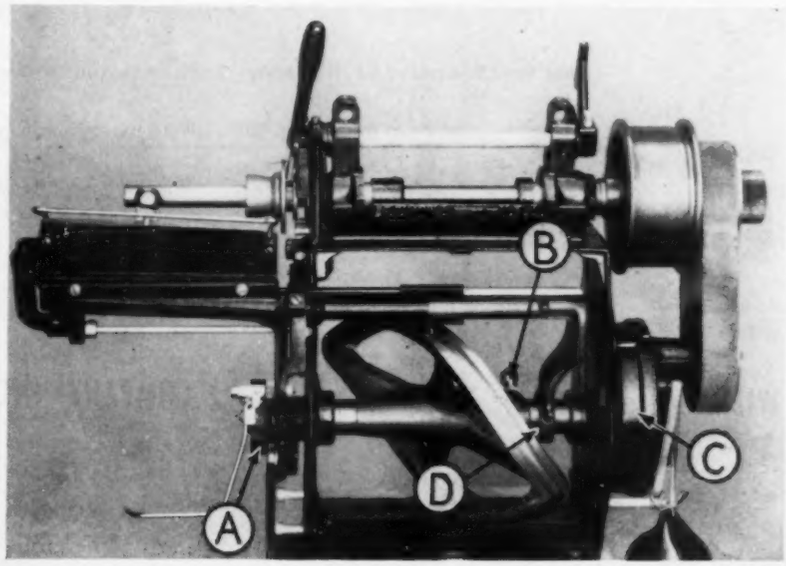
To re-assemble the mechanism, proceed as follows:

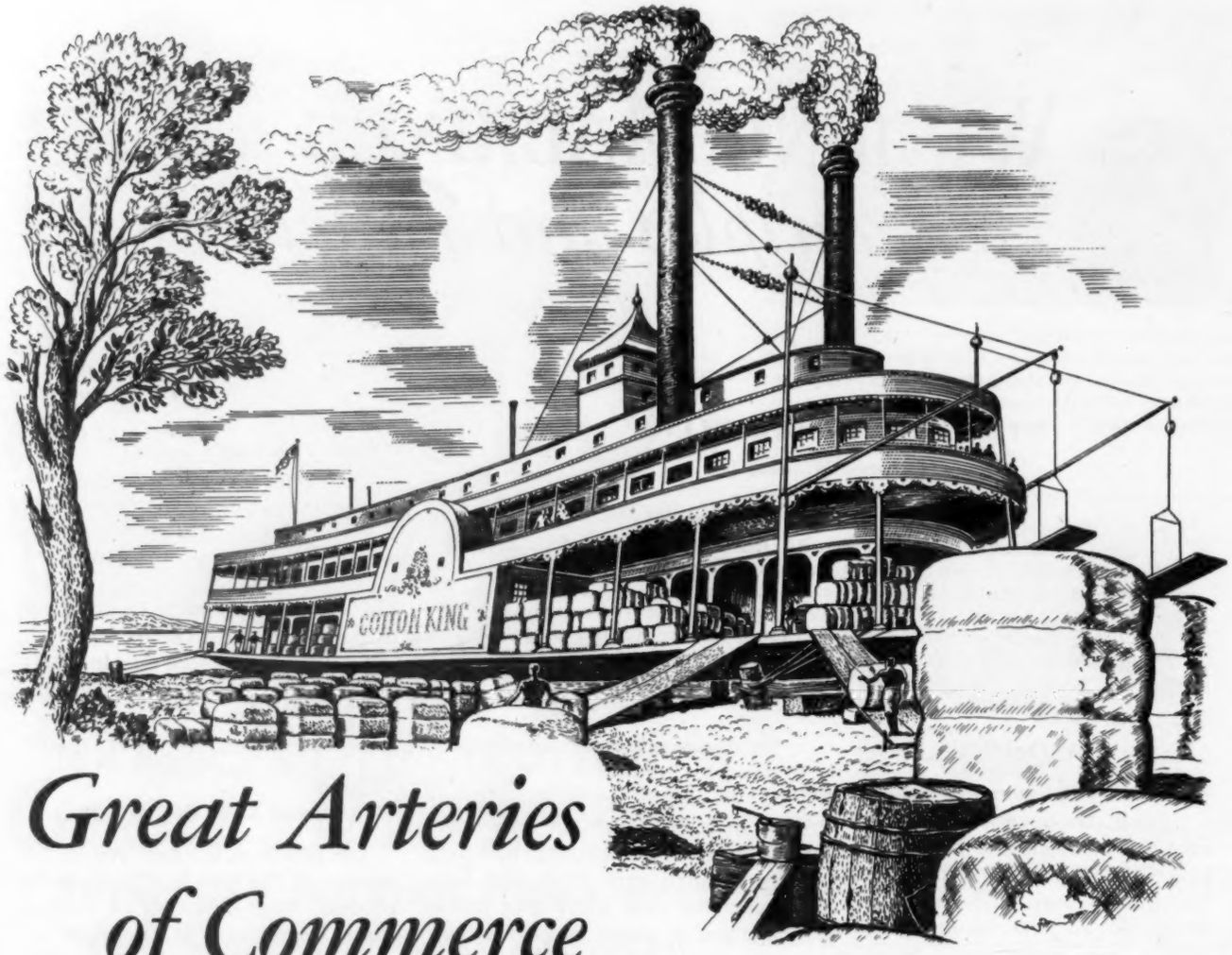
1. Pass cam shaft through rear hole in frame, through rear bearing (D) of traverse frame, and part way through cam. This will help support the cam while cam roll is being put in place. Place cam roll on traverse slide stud, with traverse slide near front of throw, and bring cam groove up to and over it. (Some fixers find it helpful to dab a little heavy grease or vaseline on the slide stud to hold cam roll in place while cam is positioned to receive its shaft.)
2. With cam roll and cam held in position with left hand, as above, pass cam shaft through remainder of cam and through front cam shaft bushing.
3. Replace stopping lever wheel in front end of cam shaft.
4. Locate flat spot on cam shaft and tighten cam screw and checknut.
5. Replace frame cover, gainer belt, weight, and cord.

Use of Cam Roll Gauge

The action of the cam roll in the groove of the cam will eventually produce wear on either or both of these parts, and if there is too much play between the two, satisfactory lay of the yarn on the package cannot be expected. The cam roll will show wear much more quickly than will the groove in the cam, and it is good economy

Fig. 43. Showing belt gain No. 50 head with frame covers removed.



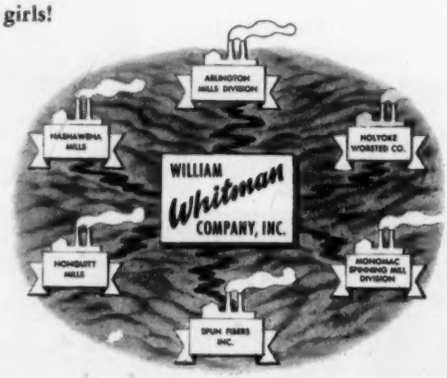


Great Arteries of Commerce

Just as New Orleans is the artery through which flows the fabulous cotton crops of the South . . . William Whitman Company is the main artery of a great textile mill organization. Under the auspices of Whitman are distributed the fine worsted fabrics of Arlington and Holyoke Worsted Co. . . . the yarns of Monomac, Arlington and Spun Fibers, Inc. . . . the famous cotton and rayon fabrics of Nashawena and Nonquitt.

From this great textile artery come the textile products which help clothe America . . . men, women, boys, and girls!

Whitman TEXTILES



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Cotton & Rayon Fabrics Division, 40 Worth St., New York, N.Y.

BOSTON: 78 Chauncy Street • CHARLOTTE: Commercial Bank Building • PHILADELPHIA: 1600 Arch Street
CHICAGO: 222 West Adams Street • LOS ANGELES: 111 West Seventh Street

to check the amount of play between the two frequently, because cam rolls are much less expensive to replace than are cams.

To determine the proper amount of play between the cam roll and the cam groove, the gauge shown in Fig. 44 can be used to advantage. One end of the gauge is an oversized cam roll, shown at (A), which is riveted to the end of the shaft. If this end fits into the cam groove, it indicates that the groove has worn excessively, and the cam should be replaced. This test should be made first. In almost every case of cam wear, it will be found that the wear occurs near the end of the stroke. It can also be said that, in almost every case, this wear was caused by running cam rolls long after they have worn down below the minimum permissible diameter. Cam rolls worn more than .010″ should be replaced.

On the other end of the gauge is a flat thin feeler attached at (B). If this feeler can be slipped between the cam roll and the wall of the cam groove, the cam roll is worn and should be replaced.

It will bear repeating that if this gauge is used at regular intervals, worn cam rolls will be detected before they have time to damage the cams, and replacing this inexpensive item will extend the life of the much more expensive cam.

Fig. 44. Cam roll gauge.

No. 50 Lubrication

In the standard No. 50 head, with belt gain, the front spindle bearing (A in Fig. 45) and the front cam shaft bearing (B) are now equipped with Oilite bushings. These bushings are of porous bronze impregnated with oil, which is fed to the bearing surfaces through the pores. The bushings will last indefinitely if kept permanently saturated with oil.

The rear spindle bearing on belt gain machines (C in Fig. 45) is a cast-iron bushing with a slot milled across the upper half, in which runs a ring over the spindle. This ring dips into oil in the reservoir underneath and lubricates this rear bearing. (Older-model machines have cast-iron, ring-oiled bearings front and rear.)

The Oilite front spindle bushing (A) is kept saturated by means of a felt wick (D), one end passing over the bushing and the other end resting on the bottom of the oil reservoir. Oil is drawn up by capillary attraction through the wick and penetrates the porous Oilite bushing.

The oil reservoir under the spindle of each head should be filled to the overflow hole each 120 hours of operation. The hole is for *overflow only;* it is not intended to provide lubrication for the cam and other parts below.

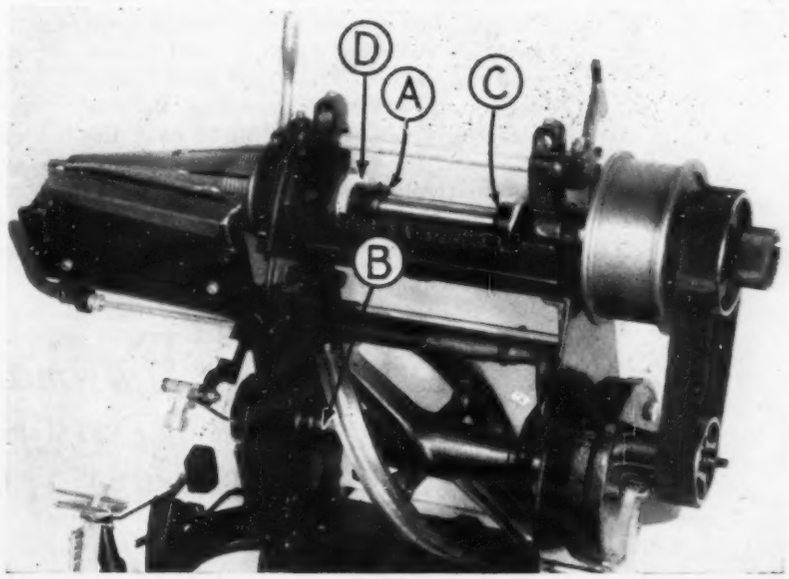
The cam groove and the front cam-shaft bushing are lubricated by oil passing from the belt gainer case along the cam shaft. The resistance of the traverse bar to the cam imparts, through the cam, a very slight lateral movement to the cam shaft, resulting in a slight "pumping" action of the cam shaft, which draws the oil from the gainer case.

Oil is introduced into the gainer case through the oil hole shown at H-1 in Fig. 46, this oil hole having a screw cap and leather washer. With the gainer belt removed, the gainer case is rotated to the right until the oil hole is in the "3 o'clock" position. Filling the gainer case to this level will bring the oil up to the bottom of the cam shaft, enough for 120 hours of operation.

Spindle idler pulleys and end idler pulleys are fitted with Oilite bushings, with grease chambers and Alemite fittings (C-4 in Fig. 46) to provide a reserve supply of lubrication. On each side of the pulley, there are two holes leading from the reservoir to the bearing, four holes in all. Three of the holes contain wicks to carry lubrication to the bearing. The fourth hole is left open, providing an air vent to release air from the chamber as the lubricant is being introduced at C-4.

Older models of No. 50 machines,

Fig. 45. Oilite bushings are used at (A) and (B); cast-iron bushing at (C); felt wick at (D) for lubricating Oilite spindle bushing (A).



To the Textile Industry

Two very different textile fibers are now being offered to the public as "rayon." One of them is known chemically as viscose, or regenerated cellulose, the other as cellulose acetate.

Today these two man-made fibers may be found in retail stores in the same types of apparel and home furnishings, such as women's dresses and underwear, men's suits and shirts, linings, bedspreads, curtains, and upholstery. Viscose and cellulose acetate differ widely in most physical and chemical properties of importance to the consumer. They are not interchangeable in any use with the same degree of serviceability. They are, in fact, about as unlike as any two natural fibers one could name in such critical qualities as moisture absorption, shrinkage, resistance to wrinkling, soiling, mildewing, ease of washing and ironing, and ability to hold an ironed-in-crease.

In Tennessee Eastman's opinion, it is unfair to offer two such diverse textile materials to the public as if they were one and the same substance, especially under a name which for a long time connoted only one of them.

For many years after its introduction, "rayon" had general acceptance in commerce as the name for yarns and fabrics made of viscose. Thus used over a long period, the word acquired a definite meaning which was helpful to both the seller and the buyer. It was specific and informative, just as are the words "cotton," "silk," "linen," "wool," and "nylon."

In later years, however, attempts have been made to extend the common commercial meaning of "rayon" to include not only all types of regenerated cellulose, but cellulose acetate fibers as well—for no better reason than that they all happen to be man-made fibers of cellulosic origin. This classification on the basis of origin is of little significance even to a scientist. It is not a practical guide to a woman buying a slip or a bathing suit, nor to a man selecting a summer suit. On the contrary, it is quite deceptive because the inference is that a garment labeled "rayon" will have essentially the same qualities, whether it is composed of viscose or acetate yarns.

Recent developments in synthetic textiles and their uses now make it more important than ever before that the consumer be able to discriminate between cellulose acetate and viscose fibers. Tennessee Eastman does not wish consumers to be misled into ascribing to its acetate fibers properties which they do not possess, and foresees that new competitive disadvantages and consumer dissatisfaction will result if the buying public ascribes the properties of acetate to other fibers.

In an attempt to remedy what is now an increasingly serious situation, the Tennessee Eastman Corporation desires to put this matter of nomenclature clearly before the trade and the consumer, and to encourage the restriction of the word "rayon" to its original, long-accepted meaning in textile commerce.

Tennessee Eastman Corporation

SUBSIDIARY OF EASTMAN KODAK COMPANY

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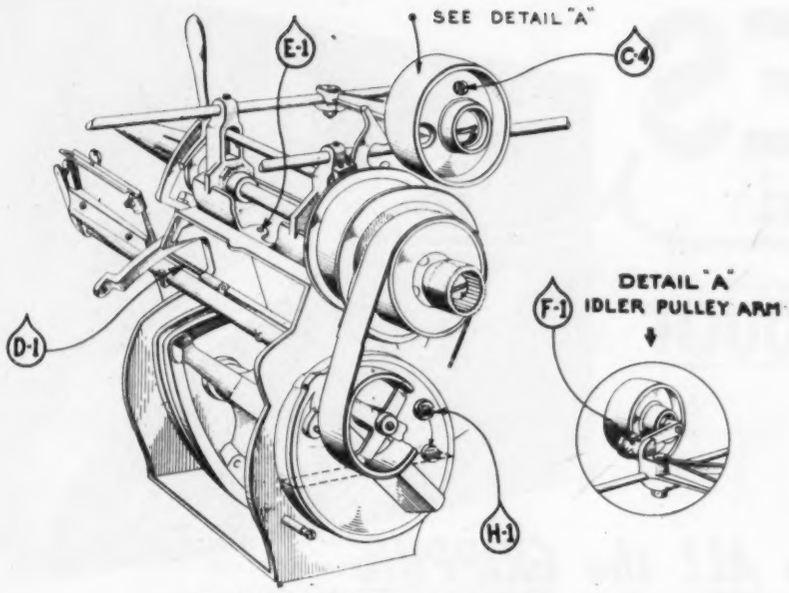


Fig. 46. No. 50 lubrication chart, belt gain.

with straight-belt drive, have oil cups for the end idler pulleys; these should be kept filled with oil No. 1 (*see Table* 4).

Figure 46 shows the parts of a No. 50 head which require lubrication. Each letter refers to the left hand column of Table 3, this table being a lubrication schedule, giving the frequency, part name, amount, and lubricant number used. The figure following each letter is the lubricant number, for which specifications are given in Table 4.

On clutch drive machines, the idler pulleys are chamber cored and have oil channels leading from the central oil chamber to the ends of the bearings. By removing the oil cap which holds the pulley in place, oil can be introduced with an oil gun up to the level of these channels. To offset the centrifugal force of the revolving pulley, a chain is provided to bring oil to the bearing while the pulley is running. The idler pulleys on clutch drive machines should be filled once a month to the bottom oil hole.

Clutch Drive Maintenance

No clutch drive No. 50 machines have been manufactured for a number of years, but it is recognized that there probably are a good many such machines still in operation. It should be understood that the following discussion covers only the clutch drive parts on these machines.

The clutch and related parts occupy the extreme rear end of the spindle, as shown in Fig. 47. The driving pulley is driven by a belt which passes over and under the pulleys in a serpentine manner, one driving belt to each gang (6 spindles).

Assembling Clutch Parts

To assemble the clutch parts, screw the gainer pulley adjuster a short distance onto the threaded hub of the clutch. Place three gainer pulley ring expanders (without pins) and one expander with pin in the four radial holes in the flange of the clutch, the concave ends resting upon the conical surface of gainer pulley adjuster.

Spring gainer pulley ring open with a screwdriver (or a special wrench, available for the purpose) and place the ring over the protruding head of the expanders, the pin in one of the expanders fitting into the hole in the groove on the inside of the ring. The heads of the other expanders fit into the groove.

Press the detent into the gainer pulley adjuster, the bottom of the

TABLE 3

Lubrication Schedule—No. 50 Machine

Symbol (from Fig. 47)	Frequency	Name of Part	Lubricant
F	Every 40 hours	Idler Pulley Arm ..... 1 drop	No. 1
D	Every 40 hours	Traverse Bar .....1 or 2 drops	No. 1
H	Every 120 hours	Gainer Case ..... As shown	No. 1
E	Every 120 hours	Spindle Reservoir.....To overflow hole	No. 1
C	Every 6 months	Idler pulleys (Alemite Fittings).....Fill	No. 4

TABLE 4

Specifications of Lubricants

Specification	No. 1 Oil	No. 4 Non-Fluid Grease
Gravity	28	
Flash	370	
Pour (degrees F.)	10	
Fire	425	
S. U. Viscosity @ 100°F	120-140	250-300
S. U. Viscosity @ 210°F	40-42	
Neutralization	.01	
Emulsion	50	
Color	Max. No. 2	Amber
Carbon	.02 Max.	
Soap Content		Lime 3%

THE SIDES of a V-BELT

Diagram of V-Belt in Sheave-Groove

Are ALL that TOUCH the Pulley

The SIDES Do ALL the GRIPPING Naturally — They GET the WEAR!

The moment you look at a V-Belt in its sheave, you see that the *sides* are the only part that ever *touch* the pulley. The *sides* do all the *gripping*—they get *all the wear* against the sheave groove wall. The sides *pick up* the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—take hold of the driven pulley and deliver the power to it.

That is why you have always noticed that the sidewall of the *ordinary* V-belt is the part that *wears out first.*

That's Why the CONCAVE SIDE
A GATES PATENT

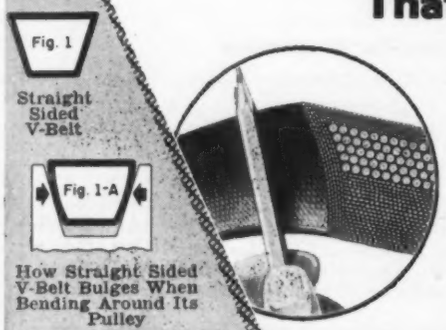


Fig. 1
Straight Sided V-Belt

Fig. 1-A
How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a Straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Fig. 2
Gates V-Belt with Patented Concave Sidewall

Fig. 2-A
Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt is Bending Over Pulley.

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

Is IMPORTANT to You

Since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will naturally lengthen the life of the belt.

The simple diagrams on the left show exactly why the ordinary, straight-sided V-belt gets excessive wear along the *middle* of the sides. The diagrams show also why the Patented Concave Side greatly *lengthens the life* of the *sidewalls* of Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-belt can possibly give.

The Concave Side is Even MORE IMPORTANT Now that SUPER VULCO ROPES *Are Available!*

Now that Gates *SPECIALIZED* Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% higher horsepower ratings—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important now than ever before!

The Gates Rubber Company
"The World's Largest Makers of V-Belts"
DENVER, U. S. A.

483

Gates
THE MARK OF SPECIALIZED RESEARCH

GATES VULCO ROPE DRIVES
Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

detent against the end of the spindle. Screw clutch screw loosely into end of spindle (left hand thread).

Screw the adjuster on the clutch hub farther, until the expanders fit snugly into the groove of the ring, but without expanding the ring. Then tighten clutch screw; this will cause the tips of the detent to slip into the corrugations on the inside of the adjuster and lock it.

Adjusting the Clutch Lever

The clutch lever is on the rear end of the clutch lever rod, as shown in Fig. 47. The two arms of this lever work against the flange of the driving pulley, the flange running between the two arms. The importance of maintaining *at all times* the setting of these two arms in relation to the flange cannot be over emphasized. If either arm is allowed to rub against the flange, the flange will be worn quickly, and the driving pulley will have to be replaced, since the flange is part of the driving pulley casting. When a driving pulley has to be replaced because of flange wear, it is usually advisable to install a new clutch lever at the same time.

The procedure for adjusting the arms of the clutch lever is as follows:

1. Stand behind the machine, start one spindle, and note whether or not either arm bears against the flange of the driving pulley.

2. With the spindle running, gauge the space between the left hand arm (as seen from the rear) and the flange with an ordinary calling card or a flat gauge approximately .010" thick. The gauge should pass freely between the left hand arm and the flange.

3. Stop the spindle and gauge the right hand arm in the same manner. In this case also, the gauge should pass freely between the two. Be sure to use a high point on the "waved" flange for gauging.

If either of the arms needs adjusting, proceed as follows:

1. Check to be sure that the brake (Fig. 47) is properly secured to the brake lever with its stud. Never under any circumstances allow a spindle to run with the brake removed from the brake lever, because when the spindle stops, the flange of the driving pulley will be quickly cut off by the arm of the clutch lever.

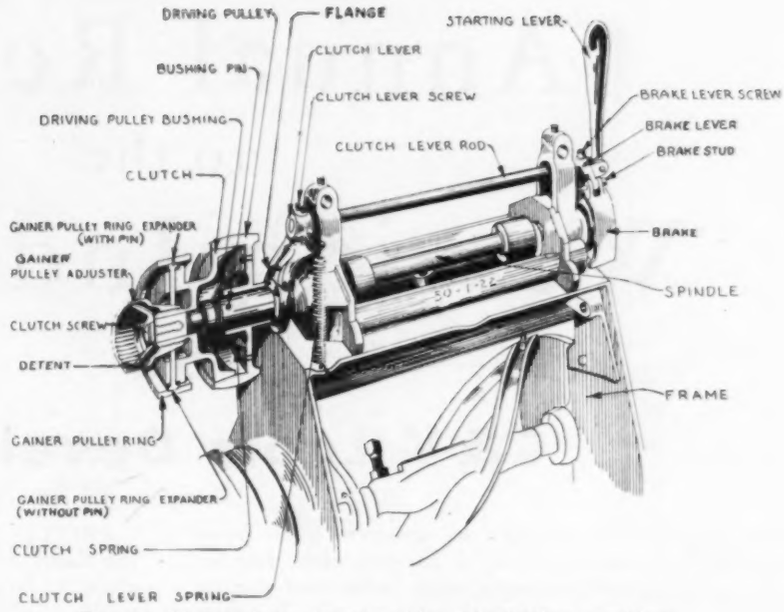


Fig. 47. Clutch drive parts on No. 50 winding machine.

2. Test brake lever screw for tightness.

3. Remove clutch lever spring.

4. If the left hand arm, as seen from the rear (Fig. 48), touches or is too close to the flange, loosen right hand clutch lever screw very slightly, tighten left hand clutch lever screw. This will have the effect of raising the left hand arm away from the flange.

5. Replace clutch lever spring and start spindle; gauge space between this left hand arm and flange with gauge or card. If gauge will not pass through, proceed again as in the foregoing until gauge will pass freely in the space.

6. Stop spindle and gauge space between right hand arm of clutch lever and flange. If this space is equal to the space gauged in the preceding paragraph, the adjustment is complete.

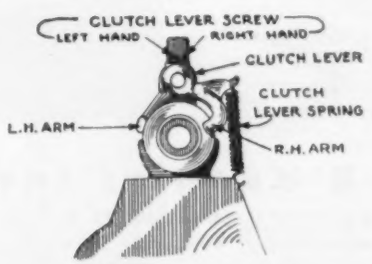


Fig. 48. Clutch lever must be correctly adjusted to prevent wear on driving pulley flange and to insure proper functioning of clutch.

7. Check adjustment of both arms with spindle running and stopped and with clutch lever spring in place.

8. If the adjustment is correct, smear faces of both arms and the flange with vaseline or heavy grease.

Removing Clutch Assembly

If the clutch fails to function properly, it may be due to the clutch springs inside the driving pulley not being effective, due to loosening of their screws, or the trouble may be due to wear on the face of the clutch or the inside face of the driving pulley. If necessary to remove the clutch and driving pulley assembly from the spindle, proceed as follows:

1. Remove gainer belt.

2. Remove clutch screw (left hand thread) and detent.

3. Press starting lever to the left (as seen from rear of machine) as far as possible, and the right hand arm of the clutch lever will clear the flange of the driving pulley, permitting pulley and clutch assembly to be removed from the spindle.

4. Remove clutch from inside of driving pulley.

5. Examine screws which hold

Annual Report
to the
Weaving Industries
on
C & K Loom Developments

No revolutionary changes are about to burst from the C&K Engineering Research Laboratories. For no lucky accidents have occurred here in the past year to short-cut any of the planned projects which move forward steadily on the basis of careful, organized work. Progress may be reported in these directions:

REDUCTION OF VIBRATION IN LOOM FRAMES: New methods of mounting looms are being studied, in an effort to reduce transmission of vibration to the mill building without increasing the motion of the loom. Dynamic balancing is also being studied. And progress is being made by use of light metals.

LAY: Magnesium and aluminum handrails are being mill-tested. And a magnesium lay indicates a possibility of higher speeds for narrow-fabric looms.

DRIVES: *Direct Drives,* as used on large, slow-speed looms, have been improved in two ways: (1) by a solenoid brake mounted directly on the motor shaft, or (2) dynamic braking which stops the motor-rotor by introducing rectified power in the windings.

Independent Drives, as used on high-speed looms, require a clutch to handle the flywheel effect of the motor. C&K has developed for the S-6 Loom a plate clutch, of great capacity and small clearances, which can be easily released in a remarkably short interval. Also, this clutch may be re-lined without disassembly. At the same time, experiments are in process on an electrically operated clutch.

MAGAZINE: All C&K types of rayon looms are now being built with vacuum control of the filling yarn.

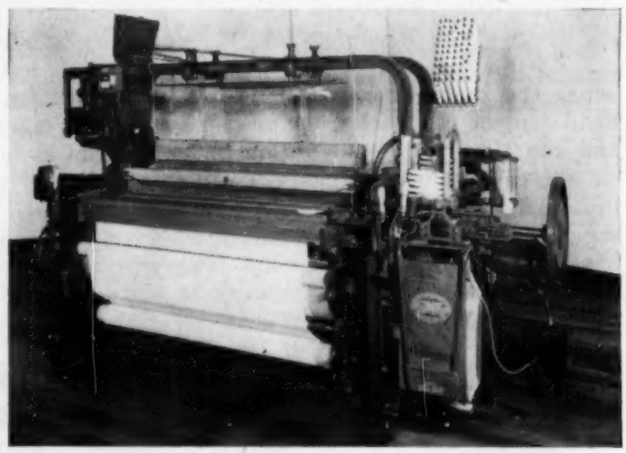
FEELER MOTION: The feeler which detects absence of yarn on bobbins, and which actuates the magazine, has been developed in two forms: (1) an electric feeler for delicate yarns, and (2) a mechanical side-slip feeler for cotton and worsted. Both these feelers have a light touch, yet are positive-acting. Studies indicate possibilities of further improvement.

PROTECTION: In stopping the loom to prevent the shuttle from damaging the warp, the problem is to absorb a large amount of energy with minimum shock to the machine. On large, slow-speed looms, dynamic braking of the motor is successfully used. On high-speed looms, other methods are required and these are now under experiment.

LET-OFF: Increasing diameter of loom-beams brings problems in the efficient operation of let-offs, which must maintain uniform tension on the warp, and feed the warp from the beam. C&K is moving toward the use of a let-off driven by a motor controlled electrically by a contactor which is actuated by the warp. This electric control responds to very slight changes in warp tension.

BEAMS: Experiments are in progress on beams of steel, cast iron and light metals, singly and in combination; also on locking devices for adjustable flanges.

In every case, the final decision will be made by weighing the cost of the part or motion against its merits. And in any *case, you may be sure that any new C&K loom-feature will measurably increase weave-room efficiency.*



Crompton & Knowles Loom Works

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clutch springs inside driving pulley. Tighten if necessary.

6. With driving pulley in one hand and clutch in the other, push clutch partly into driving pulley, noting whether or not the clutch springs pull the clutch smartly into place. Also note if reverse action takes place when clutch is partly pulled out of driving pulley. If these clutch springs are not strong enough to function in this manner, after their screws have been tightened, new springs should be installed.

7. If clutch springs are working properly after tightening the screws, or after new springs have been installed, re-assemble the clutch and driving pulley assembly on the spindle.

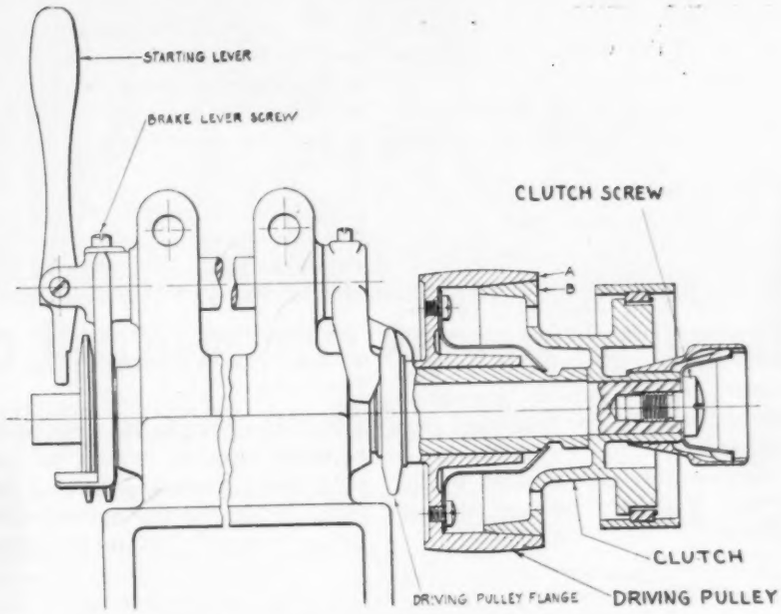


Fig. 49. Showing correct fit of clutch into driving pulley.

Changing Driving Pulley

If the driving pulley has been so badly worn—either on the inside face, which contacts the clutch, or on the flange—that replacement is necessary, proceed as follows:

1. Remove old driving pulley and clutch assembly as covered in the foregoing.

2. Take *new* driving pulley in one hand, with *old* clutch in the other, and make sure that these two parts align with each other; that is, whether the section of clutch at (B) in Fig. 49 fits properly into driving pulley at (A). If so, complete the assembly of driving pulley and clutch and replace on the spindle. Be sure to check the adjustment of the two clutch lever arms, as previously described.

3. Should the new driving pulley and old clutch not fit as covered in the preceding paragraph, it is evident that the clutch is worn beyond further use, and a new one should be installed.

An important point to keep in mind regarding clutch drive machines is that spindles should never be allowed to remain stopped, with the driving pulleys idling, for any appreciable length of time. There is not sufficient lubrication provided to the driving pulley bushing to permit continued idling of the pulley and bushing on the spindle, and unnecessary wear will result. If necessary, keep the spindle in operation by tying up the breakage lever. If a full gang, 6 spindles, is to be stopped, remove the drive belt from the motor or drive shaft pulley.

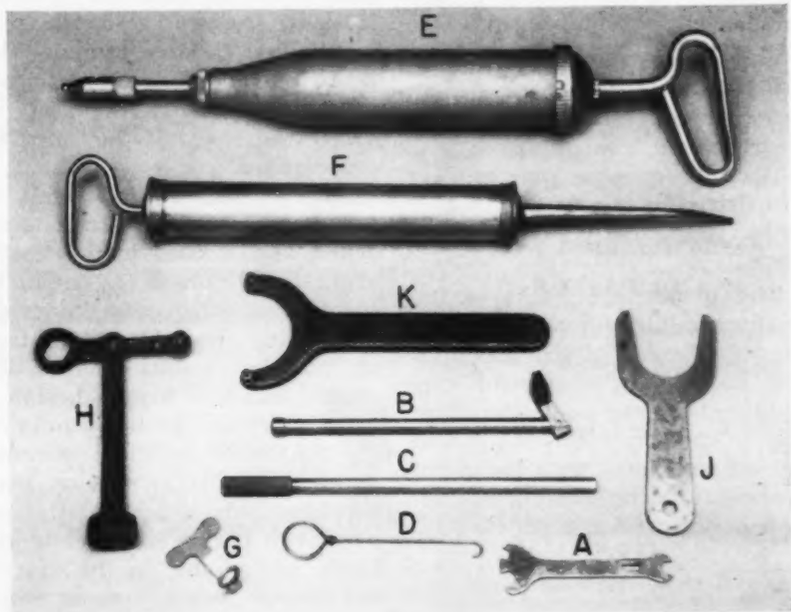
The oil groove on inside of driving pulley bushing should be cleaned out at least once a year, otherwise the bushing will not be properly lubricated and cannot easily move in and out, and there will be rapid wear on the flange of the pulley bushing.

Some Useful Special Tools

Shown in Fig. 50 are some special tools, most of which are necessary in the maintenance of No. 50 machines and the others are desirable.

The multi-purpose wrench (A) is used for several purposes: (1) on the nut of the eccentric screw for adjusting the stopping lever to the stopping lever wheel (*see Fig.* 17, *page* 111, *October issue*); (2) on the nut on the upper end of the tension rod which passes through the pair of finger tensions and holds them together; and (3) on the end of the gainer pinion shaft to tighten the gainer pulley

Fig. 50. Special tools used with No. 50 winding machine.



(belt gain). The slot in the straight section of the wrench is used for the latter purpose.

Cam roll gauge (B) has already been covered on page 125 of this issue.

Traverse bar bearing gauge (C), used in setting the traverse frame back, was discussed on page 111 of the January issue.

Spring lifter hook (D) is used to remove and replace the clutch lever spring (on clutch drive machines) and a similar spring on straight-belt drive machines (*see Fig.* 48).

Grease gun (E) is used to fill grease chambers having Alemite fittings.

Oil gun (F) can be effectively used to remove oil from reservoirs at cleaning intervals, and it can also be used to remove dirty oil which may accumulate in the pan under the heads.

Slubcatcher wrench (G) is used only in connection with the "Precision" cleaner, to be covered later under filament rayon winding.

Socket wrench (H) is used only on gear gain machines, to be covered later.

Shown at (J) is the wind pulley adjuster wrench, which is used only with machines having belt gain, in turning the gainer pulley ring adjuster to obtain the proper lay of yarn on the package (*see Fig.* 5, *page* 92, *August issue*).

Clutch wrench (K) is used only on No. 50 machines having both belt gain and clutch drive. Its function is to hold the spindle assembly from turning while the spindle screw is being tightened. With the prongs of the wrench placed into the holes in the clutch, the wrench handle is brought down to the gainer case as far as it will go. Then the spindle screw is tightened with a large screwdriver having a square shank. This permits using an S wrench for extra leverage.

Cotton Warp Sizing

Article 14*

By PAUL V. SEYDEL, D.Sc.

THIS is a continuation of the series of articles on the various considerations and technicalities involved in scientific and successful warp sizing. In this article, Dr. Seydel begins the discussion of slasher room equipment.

THE EQUIPMENT, location, and lay-out of the slasher room should be given great care. It should be placed in the line of traffic from the warpers to the weave rooms, and should be well-located with respect to window or sky-light ventilation, particularly in hot climates. The presence of large amounts of heat and moisture in some basement slasher rooms keeps human efficiency and uniformity of operation at a very low level.

There should be ample space in back of the slasher for section beam storage. There should be good light in front of the slasher so that the operator may be able to catch quickly any ends out of lease, particularly on pattern work.

The proper equipment of the slasher room is as important as the proper selection of sizing materials. Poor sizing equipment may nullify the value of the most scientifically compounded size, and perfect equipment with the use of a scientific sizing formula will improve and increase production.

Kettles. The size and number of cooking and storage kettles will depend on the requirments of the mill. Where a wide variety of goods requiring different formulas is sized, one storage kettle will be required for each formula. The kettles should be of rust-proof materials, such as stainless or nickel-clad steel, or they may be copper lined.

Asbestos covering is a small investment that pays large dividends, and is used in practically all up-to-date mills. The saving in steam alone will pay for its installation, and the added advantage of uniform results and better quality makes it highly desirable.

All pipes and kettles should be covered with sufficient asbestos to keep the size at uniform temperature. This is particularly important in the case of the storage kettle and piping; in the case of the storage kettle, because when size is kept overnight it is necesary to keep it above the congealing point to assure best results.

Size once congealed and reheated, even if it has the appearance of continuity to the eye, consists of a quantity of minute lumps that do not have the colloidal properties necessary for a good film of size. In the case of pipes where the radiation surface is great in comparison to the volume of size contained therein, it is important that asbestos be applied to insure the size against congealing.

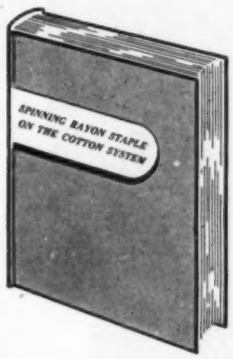
It is a simple matter to cover a kettle with asbestos. A few strips of wood about 12 inches apart, running vertically from top to bottom of the kettle, are wired around with baling wire. These strips stand out from the kettle some ¾-inch. Around this, chicken wire of the right height should be tied with baling wire. This forms a

*Article 13 was published in the January 1948 issue.

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N.Y. MARCH, 1948

New Handbook Gives Comprehensive Answers to Questions on "Spinning Rayon Staple on the Cotton System"

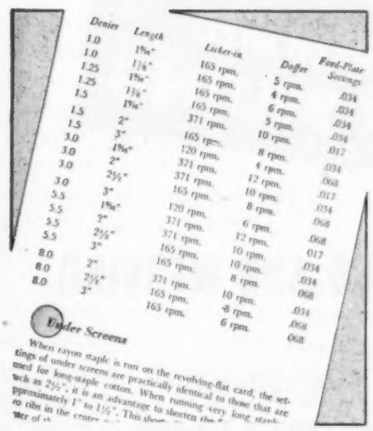


Q. At what stage in yarn production should rayon staple be blended with cotton?

A. Due to differences in fiber cleanliness, the opening, picking and carding of each fiber should be done separately; and since both dye similarly, the blending should properly take place in the drawing-frame stage—preferably in three drawing processes.

Q. Using 1.0 denier, 1 9/16" rayon staple with a cylinder speed of 165 rpm., what should the licker-in and doffer speeds and the feed-plate setting be?

A. Licker-in, 165 rpm.; doffer, 5 rpm.; feed-plate setting, .034.



Denier	Length	Licker-in	Doffer	Feed-Plate Setting
1.0	1⅜"	165 rpm.	5 rpm.	.034
1.0	1⅝"	165 rpm.	6 rpm.	.034
1.25	1⅝"	165 rpm.	6 rpm.	.034
1.25	1¾"	371 rpm.	5 rpm.	.034
1.5	1⅝"	165 rpm.	10 rpm.	.034
1.5	2"	120 rpm.	8 rpm.	.017
1.5	3"	371 rpm.	4 rpm.	.034
3.0	1⅝"	371 rpm.	12 rpm.	.068
3.0	2"	165 rpm.	10 rpm.	.017
3.0	2½"	120 rpm.	8 rpm.	.034
3.0	3"	371 rpm.	6 rpm.	.068
5.5	1⅝"	371 rpm.	12 rpm.	.068
5.5	2"	165 rpm.	10 rpm.	.017
5.5	2½"	165 rpm.	10 rpm.	.034
5.5	3"	371 rpm.	8 rpm.	.034
8.0	2"	165 rpm.	10 rpm.	.068
8.0	2½"	165 rpm.	8 rpm.	.034
8.0	3"	165 rpm.	6 rpm.	.068

Under Screens

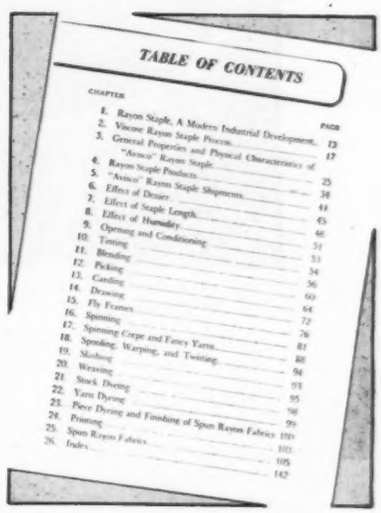
When rayon staple is run on the revolving-flat card, the settings of under screens are practically identical to those that are used for long-staple cotton. When running very long staple such as 2½", it is an advantage to shorten the [illegible] approximately ⅛" to 1½". This shortens the [illegible] to ribs in the center [illegible] ter of [illegible]

Using a cylinder speed of 165 rpm., proper licker-in and doffer speeds and feed-plate settings are indicated in the above table for rayon staple of various deniers and lengths. It is just one of many useful charts, tables and graphs in the new AVC handbook, "Spinning Rayon Staple on the Cotton System."

These are just two of hundreds of technical questions answered in the new handbook, "Spinning Rayon Staple on the Cotton System," just published by American Viscose Corporation. The multitude of facts and figures in the 156 page book are based on years of study in laboratory and full-scale machinery tests at the AVC Textile Research Department.

The book goes far beyond such accepted knowledge, for example, as that yarns spun from fine denier staple are stronger and their fabrics softer. It goes into the details of how to handle such staple. It points out the possibility that neps will be more prevalent, calling for changes in picking and carding operations to achieve clean yarns. Then it details procedures for achieving this result.

Published for the aid of textile technicians and manufacturers, this book is expected to be a valuable aid in advancing still further the tremendous progress of the spun rayon industry. It is being distributed free to technically qualified persons who request it on their business letterheads.



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The broad scope of the subjects covered in the handbook is shown in this section of the Table of Contents.

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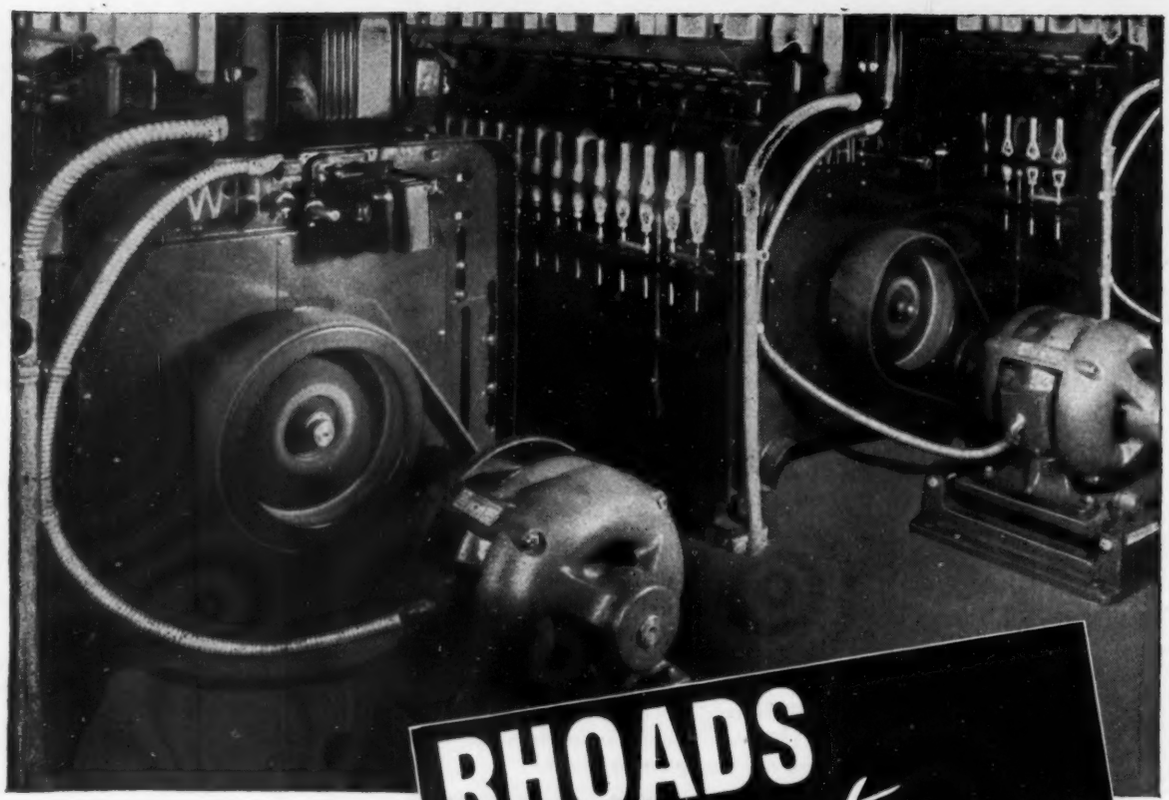
RAYON 20 YEARS AGO

NEW YORK, March, 1928—Fabric improvement rather than just cost reduction is the current goal of fiber blending experiments, a textile publication states.

MEADVILLE, PA, March, 1928—The Viscose Co. will enter the acetate rayon field with a plant to be built here soon, it is reported locally.



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suitable lath for the asbestos plaster or cement which is then applied and smoothed down with a trowel to a thickness of 1½ to 2 inches.

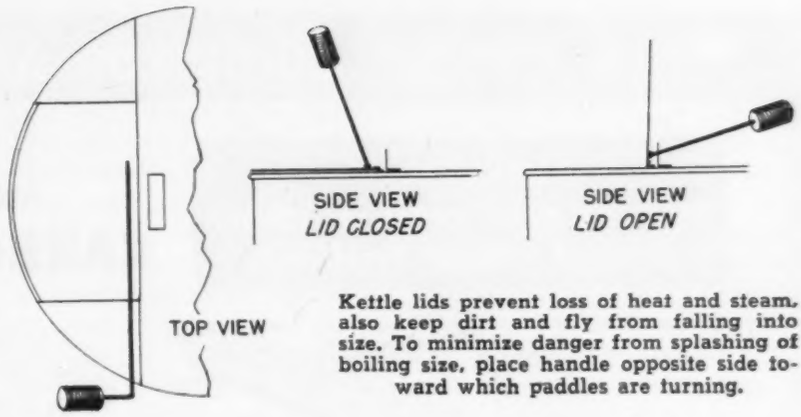
The top of the cement coating, directly under the flange, should be beveled in toward the kettle instead of being brought out even with the flange. After the asbestos has set, make a paste of starch and water, or use a water-base paint and paint the surface. While this is still wet, put a cover of sheeting or duck around the cement, and fasten it at the top and bottom with wire or bands. Wet the cloth with hot water, which will shrink it to a tight fit. Then paint it with three coats of a good oil paint.

The whole thing can be applied on an ordinary storage kettle for a very few dollars.

A simpler method of applying asbestos is to obtain blocks of asbestos 1½ x 2½ x 12 inches, and wire these to the outside of the kettle.

Kettle outlets should be placed flush with the bottom, and the kettle should be leveled to permit complete drainage of contents. There should be a connection close to the outlet that leads to the sewer. A short length of garden hose is very helpful for thoroughly washing down the kettle.

The kettles should be equipped with lids to prevent loss of heat and steam as well as to prevent dirt and fly from falling into the size. A piece of steel rod two or three feet long bent at right angles, with a counter-weight on one end, welded to the kettle lid near the hinge as shown in the illustration, will hold the lid in the open position, and has the great advantage that the lid can be opened without the operative being scalded by steam. If desired, a stop of angle iron may be welded to the kettle to keep the lid from opening too far.



Kettle lids prevent loss of heat and steam, also keep dirt and fly from falling into size. To minimize danger from splashing of boiling size, place handle opposite side toward which paddles are turning.

Cooking Kettles. It is advantageous to have cooking kettles of uniform size, in order that the size maker may use the same weights and measures for each kettle. The kettles should be of such size that the contents of cooked size will last no more than two or three hours. In this way the size in the storage kettle is constantly fortified with fresh size, and more uniform results are obtained.

The practice of making enough size at one time to last four or five hours or longer should be avoided as it will make uniform sizing impossible.

The cooking kettle should be of such size as to allow sufficient space at the top for vigorous boiling and stirring. The mistake of over-loading cooking kettles is often made. It is impossible to thoroughly boil the starch without danger of boiling or foaming over with an excessive load.

It is desirable to have on the cooking kettles a 4-inch vent which extends two or three feet above the top of the kettle, then outside through the wall of the slasher room or through a window.

The agitators for the cooking kettles are most important, particularly where heavy size is being made. There should be sufficient paddles running fast enough to thoroughly mix the size, but not so fast as to break it down rapidly. Usually a speed of 55 - 65 rpm is the best.

Some people prefer double agitators, revolving in different directions. However, it is found that adequate stirring is accomplished by use of a couple of baffle bars welded in place across the kettle between the blades of the agitator. A single agitator without baffles will often simply revolve the mass of starch paste without stirring properly.

Agitators should be of the same size, type, and speed, in all cooking kettles, since agitation as well as temperature and chemicals is an important factor in the preparation of the starch paste. Should one kettle have an efficient type of agitation while another has a poor one, the starch will lose more viscosity in the first one during the same length of time than in the second, and the results obtained will not be uniform.

Where the variations in the steam supply are so great that the finished volume of the size cannot be kept within an inch of the same level after each cook, on using the same amount of water to start, it may be necessary to add water to finish with the same number of gallons. For this purpose, there should be a source of hot water at the cooking kettles.

It is poor practice to run cold water on size because where this water hits the size it reduces the temperature below the congealing point and forms small lumps, which, even though not apparent to the eye, are detrimental to the filming properties of the size mix. Size once congealed and re-heated is never so efficient as size not allowed to go below the congealing point.

The cooking kettle should be equipped with perforated steam coil with uniform perforations around its circumference to admit the steam uniformly around the entire circumference of the kettle.

In some mills, air is piped through the steam coil where vigorous initial agitation is desirable, such as when using wheat starch.

The steam coil should come into the side of the kettle, not in through the top. A line coming through the top will collect size,

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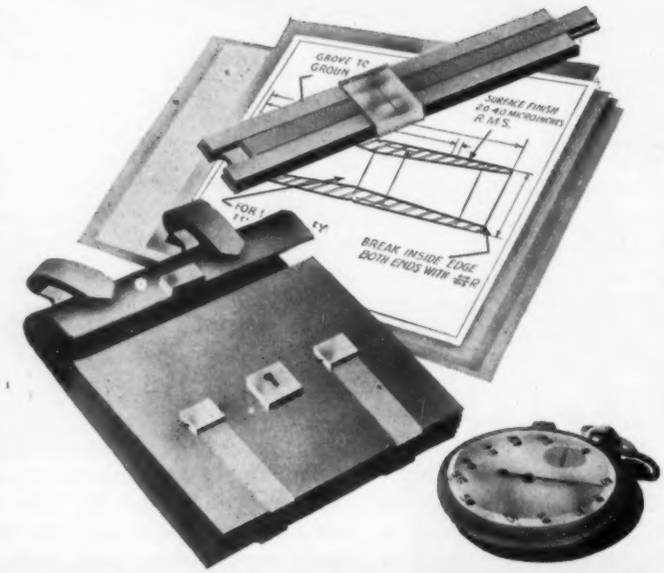

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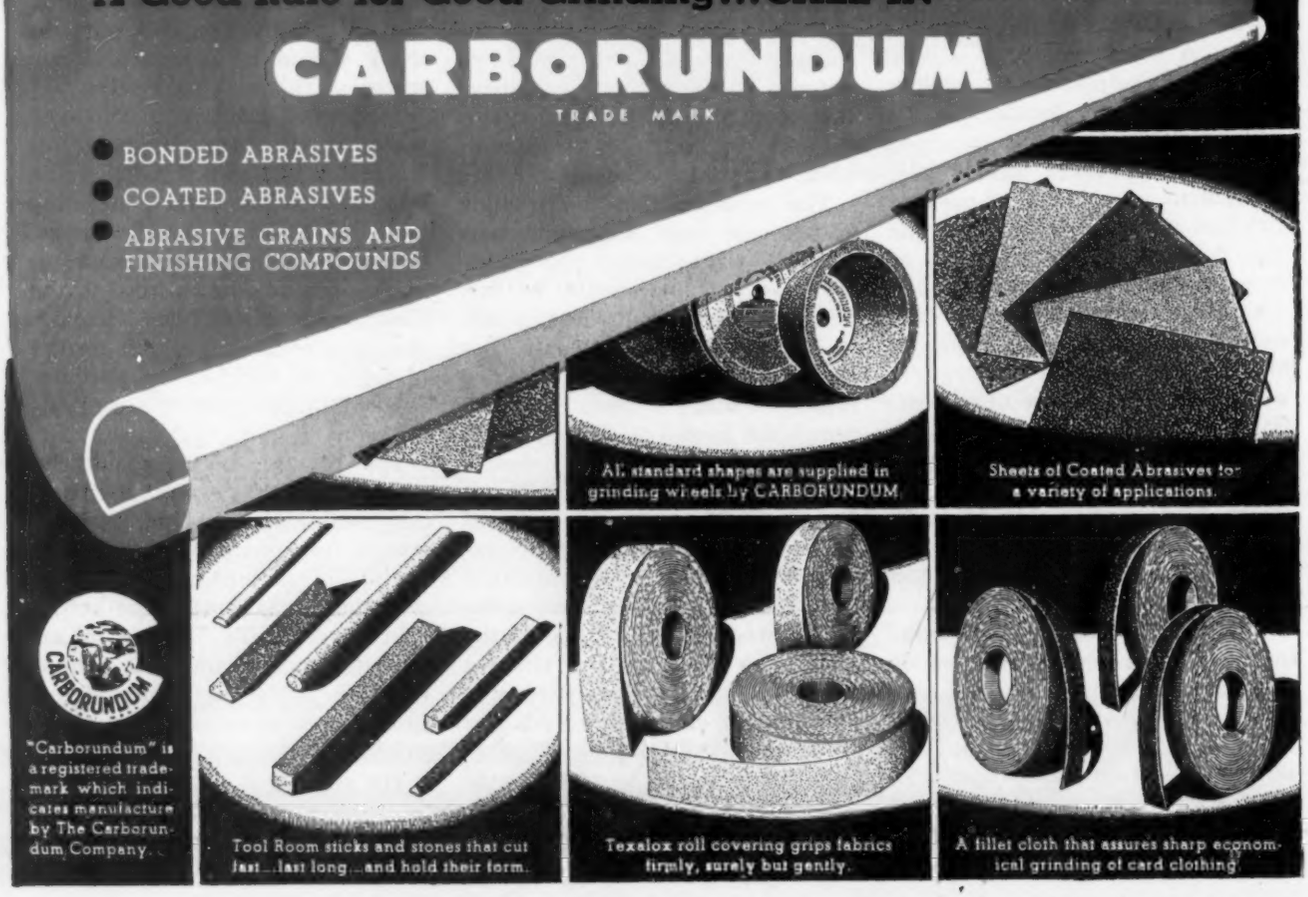

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"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company.

cook it hard and allow it to fall off now and then. This leaves lumps of hard size in the mix.

One valuable adjunct to the cooking kettle is a sight glass in the water line below the tap. This enables the operator to determine if water is dripping in from a leaky valve.

Storage Kettles. The storage kettle should be large enough to hold the contents of two of the cooking kettles. Since there is no advantage in vigorous boiling in this kettle, more of the total capacity is available for use. The agitation in this kettle should be sufficient only to keep a movement in the size, thereby keeping it uniform throughout and preventing formation of a crust on the surface. The movement should not be so fast as to break down the starch. 15 - 20 rpm is usually sufficient.

This kettle should be equipped with a closed coil to obviate the incorporation of water through condensed steam, thereby weakening the size.

Piping. All piping in the slasher room size system should be made of brass or some other rust-proof material. It is of prime importance in the design of a system to have a minimum amount of pipe from the kettles to the size boxes and as few right-angle bends as possible. All pipes should be well pitched to drain thoroughly. The pipes should be of sufficient size so that they will not clog easily.

Usually a 2-inch pipe is preferable. The valves in the line should be of the gate-valve type to give a straight, clear opening. At suitable convenient places the size line should connect with the steam and water supply for the purpose of blowing them and washing them free from congealed size, dirt, etc.

The steam line should have a master valve at a distance from the kettles and the size boxes, so that in case of emergency, such as boil-overs, the steam may be cut off without exposing the operators to danger of scalding. The safety factor should also be considered when placing valves and pipes, so that burns will not occur from accidental contact with the steam lines. The lines should be located where they will not be tripped over. Steam valves for the kettles should not be behind the kettles where they will be difficult to reach for frequent adjustment.

The Slasher Box. The slasher boxes should be lined with stainless or rust-proof metal, and should be equipped with an outlet to the sewer from the bottom so they can be completely drained. It is preferable to have the boxes of such shape that they follow the contour of the rollers with no sharp corners or dead areas.

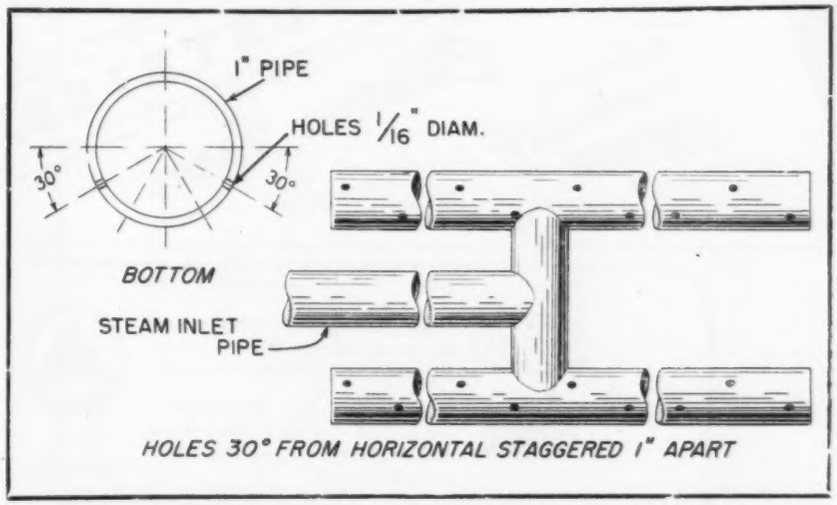
They should be of no more than sufficient size to take care of the space required by the rollers and hold enough size for practical operation, in order to obviate waste and a tendency to have different temperatures in different parts of the box with stagnant corners, causing film and lumps to form.

It is very important that the open coil in the size box have uniform perforations and that the line feeding the coil be joined at the center to feed the steam uniformly in both directions.

One of the best types of coils is constructed in the form of a long thin letter "H," nearly the length of the size box, with the steam feeding into this from the center of the crossbar. A line feeding in only one side will give uneven boiling in the size box, causing the size on one end to spatter on the yarn, while that in the other end tends to cool down.

Another way of preventing this is to have the steam coils come into the box from both ends. It is claimed that this keeps the ends of the box warmer, where more heat is needed due to radiation. Where difficulty is encountered in maintaining proper boiling of the size, three pipes may be used instead of two. One should be under each squeeze roll and one under the immersion roll.

The perforations should be on each side of the pipe, pointed down and staggered at an angle of about 30° to 40° from the horizontal. Although in directing the steam toward the bottom of the box, there is more of a tendency to stir up trash that has settled to the bottom, the advantages obtained far outweigh this disadvantage. Besides, if a filter is used as recommended over the inlet to the size box, and if the box is cleaned out regularly, no troubles will be experienced from this source.



Recommended construction for steam coil for size box. Ends are plugged and capped. Center section may be three T joints, or welded. All pipes standard 1-inch, centered under copper rolls, and should come practically to ends of size box.

The accompanying diagram shows what is probably the best construction for the steam coil for the size box.

A trap must be placed in the steam line near the box to avoid dilution of the size with condensed water.

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How OTHER MEN Manage

Tension Device for Universal Winders

EDITOR TEXTILE INDUSTRIES:

A tension control for Universal winders is shown in Fig. 1. The operator can adjust the tension to increase or decrease by simply turning the thumb screw.

This device has been used successfully in a large mill winding 2s yarn on 10″ bobbins. The new tension control permits an increase of 90 yards of yarn per bobbin, or a total of 473 yards per bobbin as compared with 379 yards per bobbin, using the old type tension.

On a part wool blended yarn of approximately 2s count, 338 yards were permitted on each bobbin with the standard tension, whereas 384 yards are wound on each bobbin with the new tension. This is an increase of 46 yards for this type of yarn.

The major advantages claimed for this tension control is the number of parts eliminated, simple adjustment, and easy repair. The parts eliminated are indicated in Fig. 2.

CONTRIBUTOR No. 8018

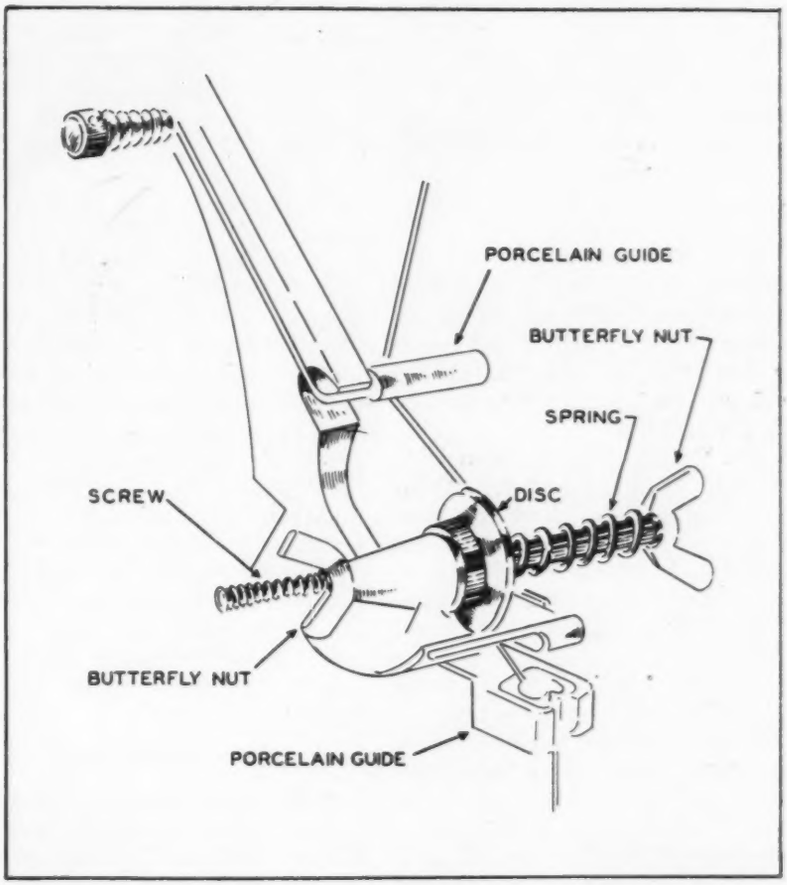
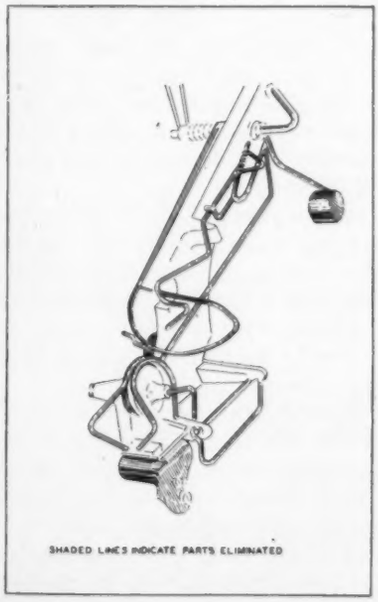


Fig. 1. Tension on yarn can be adjusted by turning thumb screw.

(Submitted in Kink Contest.)

Fig. 2.



$100 for Best Kink or Short-Cut

(Ends May 10, 1948)

ONE HUNDRED dollars will be awarded the contributor who furnishes the most helpful short cut, kink, time-saving device, cost-cutting suggestion, or quality improvement idea by May 10. The contest may be entered by any reader of this magazine, but the kink must not have been published elsewhere.

In sending in ideas, give complete description and where possible accompany description by sketch. Finished drawings are unnecessary. Participants are not restricted as to number of kinks submitted for consideration.

Only one award will be made, but non-winning contributions will be paid for at regular rates if used. Advise in original correspondence if participant's name may be used, or if contributor number is preferred.

All entries must be postmarked not later than midnight of May 10, 1948. Address: Editor "Textile Industries," Grant Building, Atlanta, Georgia.

"Wash" Pays Tribute to Fay H. Martin

EDITOR TEXTILE INDUSTRIES:

Some dozen years ago I made the following statement, "I know Mr. Martin very well, and in my judgment he is the greatest draftsman and mill engineer in the textile industry."

After reading his former articles,* and his last article on page 77 of the January 1948 issue of TEXTILE INDUSTRIES, the readers, I know, will credit me with good judgment in classifying Mr. Martin as a great engineer.

Since my first article to this journal, in the year 1913, I have pointed out that the modern fly frame is defective. Step by step in his many articles Mr. Martin has admitted the existing defects by giving a remedy.

Mr. Martin created nation-wide attention with his article entitled "The Relationship Between Cones and Flyers Upon Cotton Roving Frames," in 1908.

In 1896, he inserted a sleeve between the differential sleeve and the main shaft, thus reducing the friction of these two members by one-half. The friction was so great between these two members when the frame was driven at a high speed that a heavy oil had to be used to prevent excessive heating. The idea worked and was adopted.

By his articles, Mr. Martin has proved to all of us that certain laws pertaining to the winding-on of the roving have not been sufficiently investigated since the birth of the cotton industry, until he did so himself.

In his articles Mr. Martin has made it clear to us that the presser rod must be free at all times to respond to the velocity of the spindle.

In one of his articles he explains "The Hyperbola Curve." Before he wrote that article, how many mill men knew the difference between the hyperbola curve and the curve known as the actual bobbin revolutions obtained? Very few.

Next, let us consider his last article on page 77 of the January 1948 issue of TEXTILE INDUSTRIES. Remember the question I put to the boys a few years ago—"Why is a strand of roving of a less diameter —or occupies less space at the beginning of a set of roving than at the finish of a set?" Mr. Martin answered that question in the November 1934 issue of "Cotton."

In building a bobbin of roving, the first layers have a different shape from those following. Here it should be seen that the proper coils to the inch is important. If the coils are not close enough and the tension is tight, then this, aided by the pressure of the presser pad, will cause the strand to sink between the preceding coils and will cause breaking back at the next process. The carder, not knowing the cause, will insert more twist instead of correcting the proper coils to the inch; this makes a soft bobbin and destroys the proper hyperbola curve.

If the coils overlap, again the proper hyperbola curve is destroyed.

Worn Bottom Cone

In the year 1910-1911 I went to a large cotton mill in the state of Maine. They had trouble on almost every fly frame at the starting of every set. The trouble was that the bottom cone was badly worn for about four inches from the starting point.

Please be reminded that the greatest amount of work done by the cone belt is at the beginning of every set, and here is where there is the greatest amount of slippage. I simply changed the cone gear to suit the starting point four inches from the end of the cone, and the trouble was over. But to make such a change you must make sure that the cones are long enough.

I know of another case where a young carder took charge of a card room that was running fine work, and changed to coarse work. In order to increase the production he made a heavy lap so as to increase the weight of the card and drawing slivers. On the slubbers the hank roving was changed from .75 hank to .50 hank, when he found that the cones were not long enough.

For over 50 years, I have been interested in the textile press. In all my experience, I am unable to recall any articles which equal the instructions given in these articles by Mr. Martin, and I think they should be greatly valued and preserved by all mill men. Every young carder should get the articles written by this great textile engineer.

WASH (R. I.)

*"The Roving Frame" by Fay H. Martin. Available in conjunction with subscription to "Textile Industries," through circulation department, W. R. C. Smith Publishing Co., Grant Building, Atlanta, Georgia.

Cylinder Helps Yarn Inspectors

EDITOR TEXTILE INDUSTRIES:

There are several ways to inspect yarn for such defects as motes, slubs, unevenness, etc. These include revolving boards of various colors, skein inspection, and other methods.

We have found that one of the most satisfactory methods for inspecting white yarn is to use a black revolving cylinder. This drum may be driven by motor or by hand, but the quickest way is by the use of an electric motor. It is possible quickly to wind a considerable length of yarn in a short time and the operative can thoroughly inspect the yarn for various defects.

Carlton Yarn Mills, Cherryville, N. C., have built the black cylindrical type, motor driven machine equipped with a thread guide. The guide moves on a spiral shaft which is also driven by the electric motor.

Most cylinders in use for inspecting yarn are approximately 16 inches in diameter. The Carlton unit is 29½ inches in diameter and 57 inches wide, making it possible to inspect greater lengths of yarn much quicker.

Another feature of the machine is the right-hand threaded shaft on which are placed one or more guides (usually one to four), and on the right end of this shaft is a switch that stops the motor when the last guide comes in contact

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ladies' nylon hosiery

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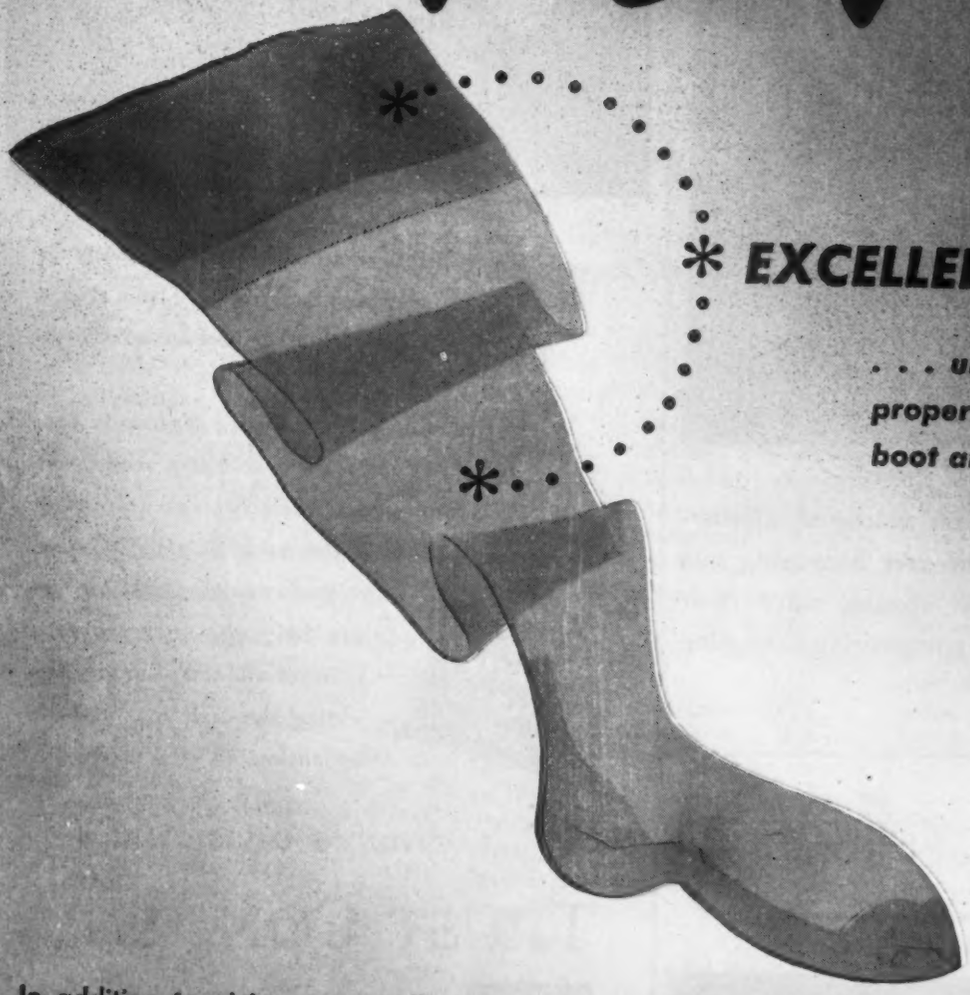

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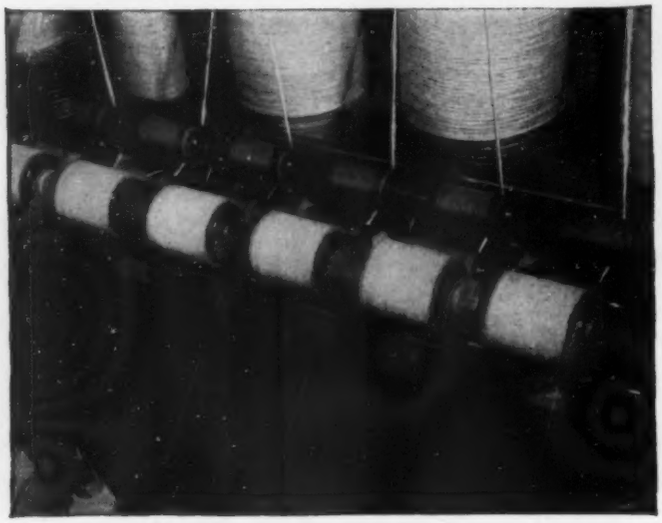

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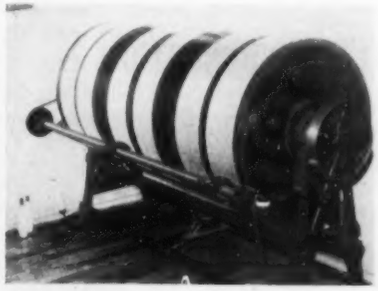
NEXT DOOR TO EVERY MILL IN THE SOUTH

with it. This eliminates trouble with yarn over-running on the cylinder.

One of the best ways to determine the defects per one thousand



yards is to run 3,000 yards of yarn on this drum, counting all neps, motes, slubs, and other defects.

By counting the defects in 10 times 3,000 yards, or 30,000 yards of yarn, a better average of imperfections is obtained per 1,000 yards of material. Of course, this would mean more time and effort in winding on the drum and inspecting the yarn, but the resulting benefits would be worth it.

First-quality yarn should not contain more than 2.5 defects per one thousand yards, and we find that by counting the defects in 10,000 yards, a better average is obtained.

A cylindrical machine for inspecting yarn is shown in the accompanying illustration.

CONTRIBUTOR No. 8036

Thin Places in Knitting Yarns

Question Briefed: *We would appreciate advice on how to avoid thin places in the yarn we are manufacturing. We make knitting yarns ranging from 20s to 50s, but up to the present time we have not been able to make a yarn finer than 20s that is of good quality. We use Texas 15/16-inch Strict Middling cotton, five bales to the mix.* (CONTRIBUTOR No. 7906, *August,* 1947).

EDITOR TEXTILE INDUSTRIES:

I have read with interest the article by CONTRIBUTOR No. 7906, and should like to give my views on his problem.

First, to make a good knitting yarn soft and lofty, he should have a longer staple cotton than he is using. For 20/1 to 30/1, I would say a good full 1 1/16" Peeler cotton would be satisfactory. For 30/1 to 50/1, a good 1 3/16" Peeler cotton should be used.

Second, I would increase the size of the blended mix from five bales to 15 or 20 bales. If he has the room, this would give a much better blend.

Third, it seems to me he is crowding his breaker card by producing 70-grain sliver. I would prefer 55-grain sliver for better carding and still get good production.

Fourth, somewhere in his drafting processes he may be stretching his roving, causing thick and thin yarn. I would inspect the drawing frames and see that the settings are suitable for length of staple, also tension and size of hole in coiler can trumpet.

Fifth, on the fly frames I would check very carefully flyer speeds and tension. This is one place that roving can be greatly weakened.

I noted that he makes 4.00 roving, spinning on conventional draft frames 20/1 yarn. I would say that a draft of 5 at spinning (even for single roving) is very low. I would check the break draft and settings on the spinning frames. It may be possible that with such a short draft and self-weighted rolls he would probably get very uneven drafting.

To summarize, I would suggest that he make a careful study of his entire set-up. It seems desirable to make changes at the speeders to make a different hank roving, and increase the draft on the spinning frames to obtain more even work.

For making 50/1, I would suggest 8.00 hank roving spun double to give an excellent yarn, round and lofty at proper twist multiple. I would not say that yarn above 30/1 could be made from single roving with entire satisfaction.

CONTRIBUTOR No. 8038

Discussion on Damaged Card Clothing

Question briefed: *We are having difficulty with the card clothing jamming, flying-up (buckling), having slack places, and getting mashed. Our cards are equipped with continuous strippers. Other details are: Cylinder wire 90, doffer and flats 100, 15-oz. lap, 65-grain sliver, carding 11 pounds per hour. Cylinder speed is 165 rpm.* (CONTRIBUTOR No. 7866, *August* 1947.)

EDITOR TEXTILE INDUSTRIES:

We do not believe that the continuous stripper has any bearing on the trouble. All of our cards are equipped with the continuous strippers and we have never had any occasion to believe that these strippers would cause the trouble mentioned.

Our opinion is that the jamming most probably is caused by heavy places in the lap, particularly the ends of the lap. Flying-up could be caused by extra heavy grinding, using light clothing or the cylinder rubbing on some part of the card such as the plates or screens. The slack places indicate that the clothing was not installed under the proper tension. If there is an excessive amount of jamming this fact alone might cause sufficient heat to aggravate the other causes mentioned.

We are not aware of the requirements of CONTRIBUTOR No. 7866, but it would seem to us that a lighter weight lap and a lighter weight sliver with more speed on the doffer would give him the same production desired and lighten the load on the card clothing.

CONTRIBUTOR No. 7876

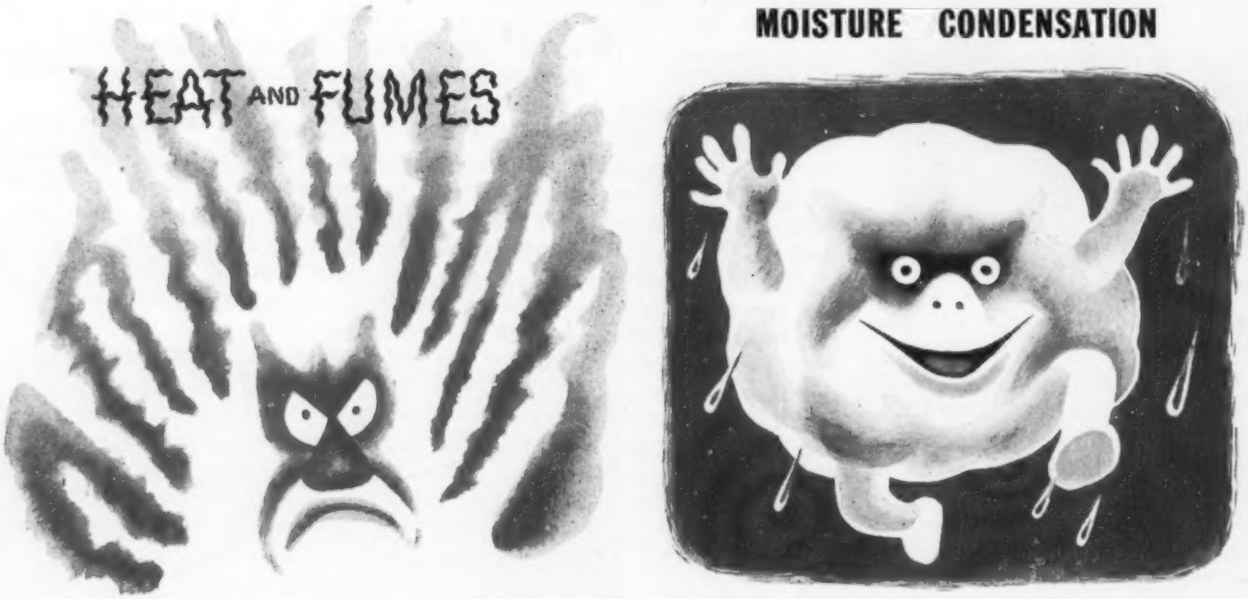
◆

EDITOR TEXTILE INDUSTRIES:

It would seem to indicate that this trouble comes from outside the card rather than from anything that is happening within.

Consider first the continuous stripper as a possible cause. This mill has had continuous strippers for many years and, while it has always been necessary to handle them carefully and set them properly, experience has shown that if this is done and they are run at proper speed they will give long

IS THIS PAIR



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and satisfactory service. The card clothing is certainly tougher and will stand rougher treatment than the stripper. Therefore, any damage to card clothing from this source would be indicated by stripper trouble first.

If the stripper is set too deep the teeth will break off of it. If set too shallow, of course, the card clothing will load, and if this condition were permitted to go unchecked it would mean eventual damage to the clothing. For 165 rpm of the cylinder the stripper, to do a good job, should turn at least 1600 rpm and it would probably perform better at 1750 rpm. If this man's card grinder is not adept at handling strippers, it might help to get the builder's serviceman to give him some instruction.

There is a possibility that the trouble is in the card clothing itself, although this is remote and unusual and probably could be spotted by the trouble being confined to one or two lots of clothing put on at the same time or clothing from different manufacturers. If the interested clothing manufacturer has not been called in, he would probably welcome an opportunity to send a representative to study this problem.

Another important phase of card clothing is the operation of putting new clothing on a card. This should be done by an expert who has the OK if he is not employed by the clothing manufacturer. We prefer to have the manufacturer's man put on the clothing at our mill and assume the responsibility for a satisfactory job. We insist, where it is possible, on having the clothing stretched-on one day, let it set overnight and then pulled-off and the card clothed permanently the next day. Sometimes, when an emergency job is being done on one card, we permit the card clother to pull the fillet on for stretch, let stand one or two hours, pull off and put on permanently.

If the clothing is good, put on properly and the cards set carefully, then for damage to be done to the clothing it would be necessary for some foreign object to get into it. This would be a problem for the card grinder and overseer.

To get the best finished card sliver with a maximum of card clothing life, it is essential that a well opened uniform lap of workable material be fed into the card.

In connection with setting and care, a bad feed plate licker-in assembly might cause trouble by permitting cotton to be plucked off the lap in lumps and fed through the card.

CONTRIBUTOR No. 7877

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EDITOR TEXTILE INDUSTRIES:

We have 251 cards all of which have continuous strippers. We run on our cards a 60 grain sliver from a 16.5 oz. lap, carding 17 lbs. per hour. Our doffers and flats have 110's wire and the cylinders have 100's. Our cylinder speed is 165 rpm.

I am not of the opinion that the continuous stripper in itself would cause any of the trouble mentioned, but lack of attention to some of the following details would cause jams and smashes to clothing.

First of all, it is a *must* that the surface speed of the continuous stripper be at least 1.25" for every 1" surface speed of the cylinder. Should the speed drop below this point, the fibers will not be kept combed to the surface, thus allowing the cylinder to load very heavily. This naturally will cause the cylinder to stretch and to fly-up and blister.

We have had a similar experience to that described above and found that slack belts on the strippers caused our trouble in this respect. We have eliminated this trouble by two methods. First of all, we require the grinder to check this belt and see that it is right each time he grinds the card. Then, too, we check the speeds of all strippers twice per month and have those corrected that are slightly off. Our speeds on the stripper are calculated to be 1850 to 1875 rpm.

Another cause of damaged card clothing is improperly set strippers on back plates. These have to be checked at each grinding or they will get off standard, and by doing so cause the card to be improperly stripped or allow a choke to accumulate and then be thrown in the cylinder causing a smash.

One of the things which gave us a lot of trouble when the strippers were first installed was to get our grinders to think about blocking out the stripper by pulling it out from the cylinder. If this is not done, the stripper as well as the cylinder runs backwards, causing damage to the wire on both, and frequently parts of the needle bars are broken. When this happens, the stripper fails to strip in those particular places with the result that the cylinder loads up and the clothing flies up.

Since at the present time all of us have a lot of inexperienced lap layers, it is most important to those of us who have continuous strippers to see that these men know how to lay a lap properly or trouble will surely result. Too thick a splice between the new and old lap, allowing the wrinkled portion of the tail to be fed in the cylinder, will smash up the best of clothing even without a stripper, and naturally a smash will cause loose wire and a stretched foundation. With strippers, the problem is magnified, since the needle bars will not absorb the shock and come out undamaged. In fact, it will intensify the damage to the clothing by being slowed down, thus making the lump of cotton beat farther into the clothing.

If CONTRIBUTOR No. 7866 will check these items, I'm sure he'll eliminate the majority of his trouble.

CONTRIBUTOR No. 7878

◆

EDITOR TEXTILE INDUSTRIES:

It seems the strippers may be set too deep into the cylinder wire. We find it necessary to set each stripper to suit the condition of the cylinder clothing on the individual card. I suggest that CONTRIBUTOR No. 7866 try setting so that stripper needles will penetrate cylinder clothing to knee of wire. By chalking cylinder this will leave about a 1¼" stripe.

Also it is suggested that belts be checked to be sure that a ratio of 1¼ to 1 stripper surface speed to cylinder surface speed is maintained.

When using brush type stripping roll, it should be clear of small hard rolls of strips before apply-

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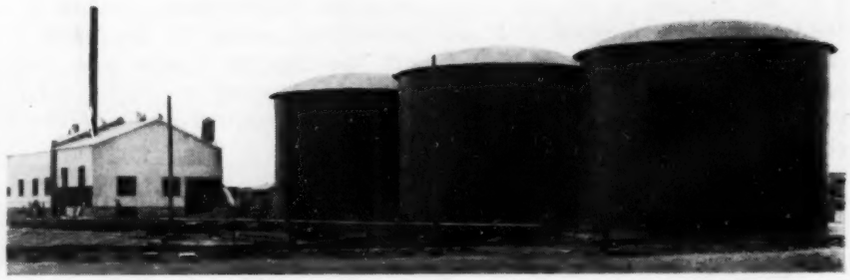

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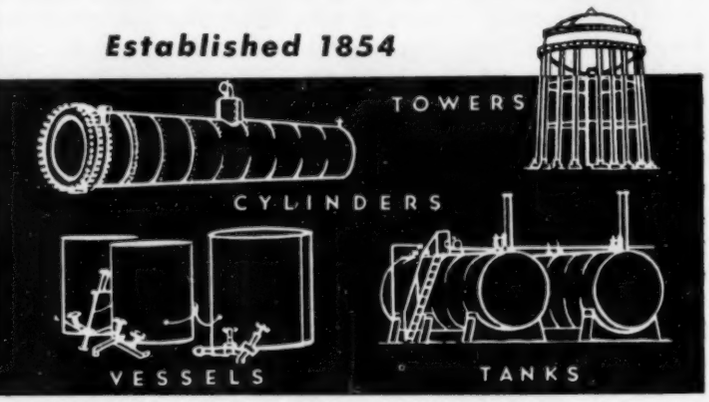

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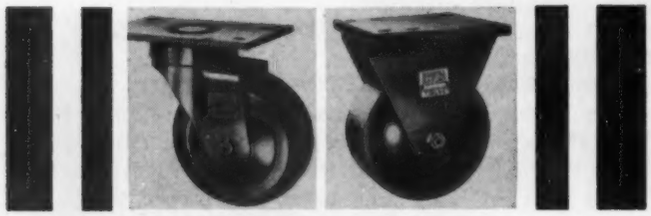

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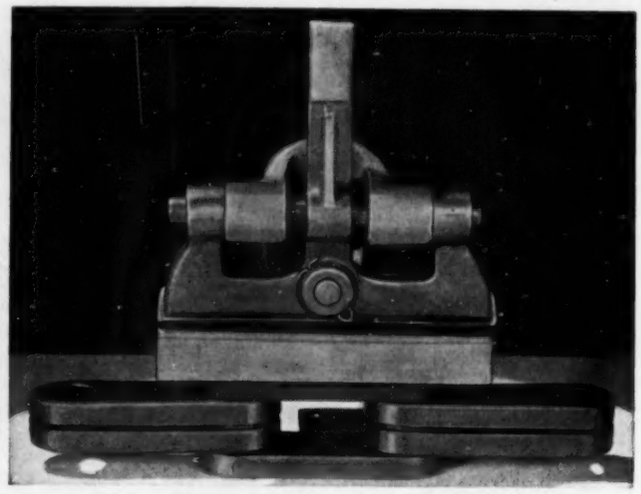

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mg to next doffer.

A check on tailing out laps is recommended to see that no doublings are pulled in, causing mashed clothing, etc.

CONTRIBUTOR No. 7880

◆

EDITOR TEXTILE INDUSTRIES:

We do not believe that the difficulty is due to continuous card strippers. We have 16 cards equipped with the continuous stripper and have not noticed damage to the clothing.

In setting the continuous stripper, we use a gauge that the manufacturer recommended and a No. 10 gauge underneath.

One difficulty that we had was that the needles on the continuous stripper sometimes are too long. We would advise checking the length of the needles. We usually take out one needle on each end in order to have better selvages.

The back plate must be watched closely because it will cause the clothing to fly up. After the settings of the card have been changed and the stripper is back in place, I would suggest that a check be made to see if it rubs. This will cause binding and flying up.

We find that clothing getting mashed is due to improper setting of the continuous stripper.

CONTRIBUTOR No. 7957

Combination Waste Paper Truck and Baler

EDITOR TEXTILE INDUSTRIES:

A light and efficient waste paper baler and rubbish cart can be made of a few pieces of angle iron, some sheet metal, a coarsely threaded rod, and some heavy gauge wire mesh. This truck may serve as a container for waste paper, and also as a baler to prepare the paper for sale or other disposal. It may also be utilized for stock waste with minor changes.

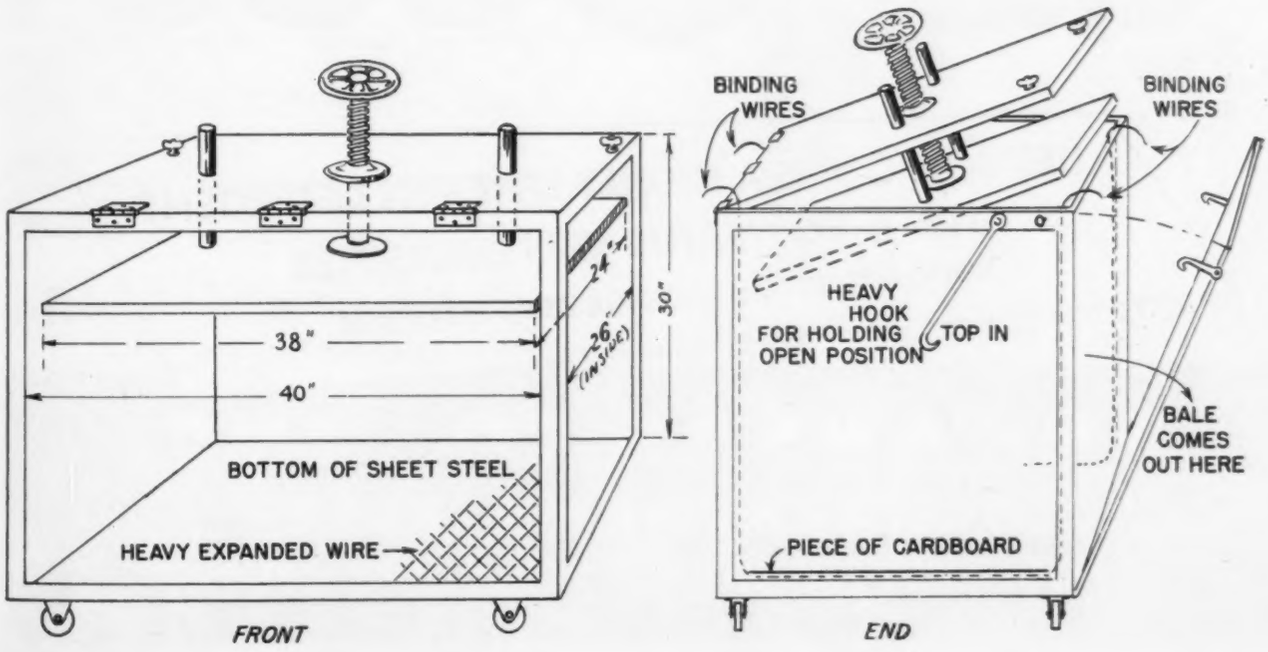
As shown in the accompanying illustration, the top is made of sheet steel, and is hinged at the side on the angle iron. The front is hinged to the bottom of the truck so it will open when the bale has been pressed. This will allow the bale to be removed easily when the top is lifted.

Operation of the baler is simple. First hook the top in position so that it stays in an upright position and out of the way. Place three or four binding wires in place, allowing sufficient wire to go around the completed bale. The wires should be placed in position to overlap both sides of the baler. Place a piece of cardboard on the bottom of the presser (24″ x 38″). This holds the waste in place.

When the container is filled with waste, take the hook off to allow the cover to close. Then set the thumb screw, and turn the handwheel to compress the bale. Relieve the pressure on bale, return the press to its original position, and hook it in place. The container is then ready for more waste.

When enough waste has been accumulated to make a full bale, another piece of cardboard should be placed on top, and the overlapping wires should be wrapped around the bale, with the ends projecting out the front. The thumbscrews should be reset after letting the top down, and the bale should be pressed until it is considered tight enough. The front door may then be opened and the wires pulled tight and twisted together. The top can then be removed, and the bale is ready for removal.

CONTRIBUTOR No. 8014



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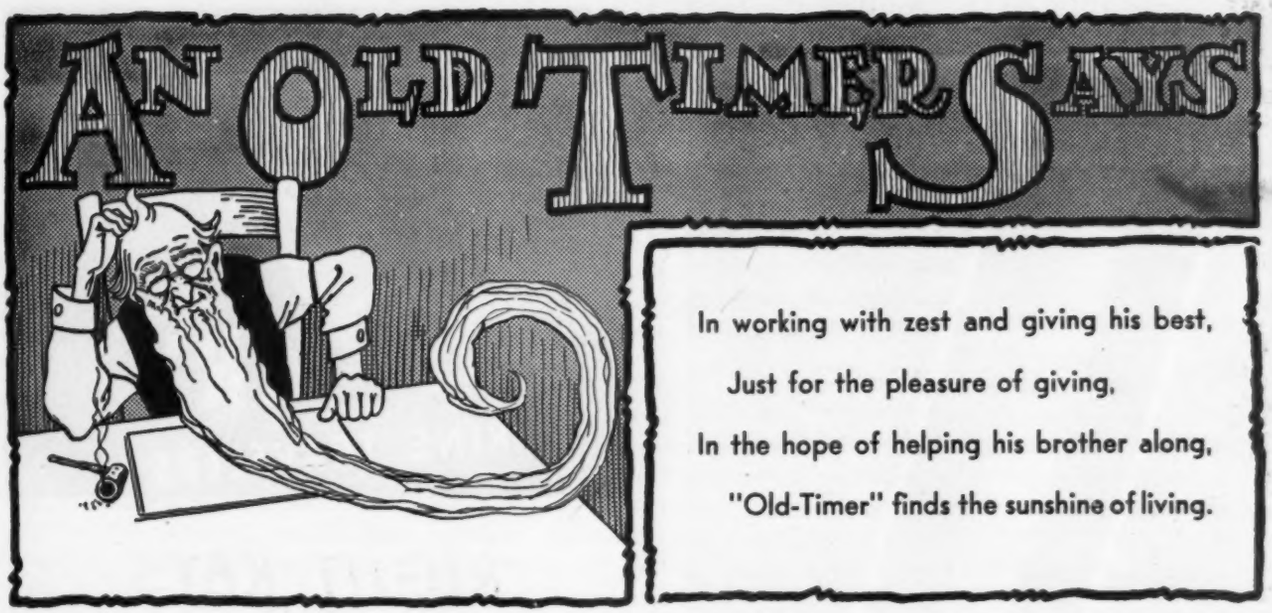

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

A New Superintendent Takes Charge

THE MILLS that OLD-TIMER will talk about have always been considered the kind that textile men designate as "good" mills. That is, they have been reasonably successful. They have not made as much money as some mills, but they have made more money than what may be termed the marginal mills.

The superintendent was a man of good character and respected among his fellow superintendents as a good manufacturer. Sure he was getting along in years, but most of us who knew him considered him as pretty much of a fixture with the firm, especially since he had been with them quite a few years.

Then, Bam! He was out—just like that.

No one seemed to know what the trouble was. In fact the superintendent himself was somewhat dumbfounded and told OLD-TIMER that they had called him in and explained that they had decided it was to the firm's best interest to make a change; that they appreciated his faithful service and were going to give him six months' salary in advance to enable him to secure another position without any financial loss.

Well, fellows, you know OLD-TIMER's curiosity is always on the lookout for something which will help his brother superintendents and overseers, so he decided he would get to the bottom of this supposed mystery, if possible.

OLD-TIMER heard that the mills had employed a comparatively young man as superintendent; therefore, he thought it best to let the matter "ride" for awhile until this new young superintendent could have a chance to show what he could do, since the former superintendent was considered a good *manufacturer*.

Recently OLD-TIMER called at these mills, and though he did not know the president very well, he decided to go in and ask him all about what we wanted to know, hoping he would listen to our reasoning and either throw us out or give us some good information we could pass along to OLD-TIMER'S readers. Here is practically our conversation:

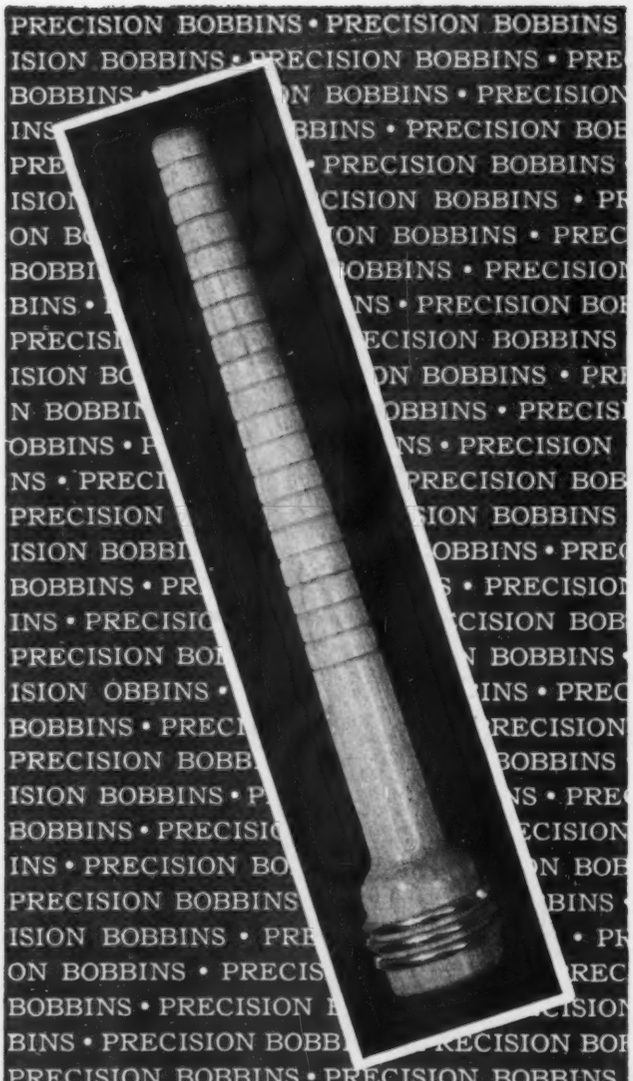
OLD-TIMER: Mr. President, when OLD-TIMER interviews a mill executive and makes any reference to that conversation, he does not mention the names of the men to whom he has talked nor the name of the mill. We are always anxious to learn about anything which will be of help to operating textile executives in their work. Oftentimes we pick up an idea here and there which helps some overseer, assistant overseer, superintendent, or manager in his work—and that is the sole purpose of OLD-TIMER'S visit to you. We believe you too would like to see any textile men profit by some good idea you may have.

Mill President: Sure, sure, come right to the point. Tell me what you are driving at—I read "Cotton" or that new name—"Textile Something" or whatever it is.

OLD-TIMER: Thank you, sir. I have only one question to ask you. About two years ago you changed superintendents. Would you mind giving me some idea as to why you changed?

(The president leaned back in his chair—put the ends of his fingers together and looked OLD-TIMER straight in the eye. OLD-TIMER held his breath—not knowing whether he was going to explode or smile, and after what seemed a very long, long time, the mill president said:)

"That is quite a story, my boy. I only wish I could write; I think I would write a book about it. I have been in the textile business all my life, but this was an experience I never thought I would have. You see, the superintendent we had was all right. What I mean is—he was a good manufacturer



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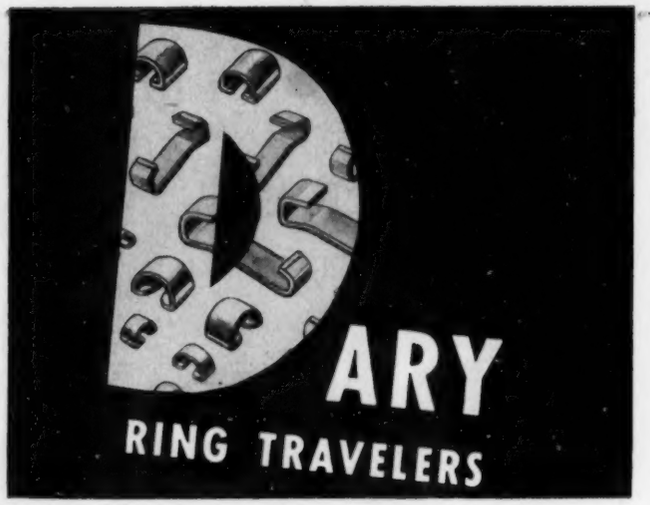

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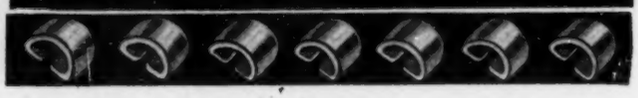

and a nice Christian gentleman, but there was always something wrong among his overseers or with the two assistant superintendents.

"He seemed to be able to hire pretty good men, but there simply was no cooperation among them. The carder and spinner in No. 2 were not on speaking terms. The weaver in No. 1 was forever complaining that the warps were the worst he had ever seen and how could a man make good cloth with such stuff as he got from the spinning room.

"Little things like this—that is, if you can class them as little things—did not seem to worry the superintendent at all; in fact, I'm afraid he did not worry about anything much.

"Still, with all the feuding we had among the operating executives, the mill ran along pretty well. That was what made it a darn hard job to let the old man out.

"As I say, there was always something wrong. Just enough to keep a fellow irritated all the time. I knew enough about the practical operation of the mills to realize we did not have a semblance of cooperation among our key men It got on my nerves, and I began to look around to see if I could find a man who I thought might improve the situation. No need to go into details, but I hired our present superintendent."

OLD-TIMER: And did he——

Mill President: Wait, I have only begun to tell you the story. But first let me explain. I am a happy man, and the operation of the mills is no longer a problem. I only wish I had had this man years ago.

OLD-TIMER: Well, just how did this new superintendent work such wonders, Mr. President?

Mill President: Well, sir, he started in right with the first conference to give our assistant superintendents and all the overseers a new slant on their duties and responsibilities. I called all the men in the office to meet him, but had no idea he was going to take that opportunity to go into a rather lengthy, but highly interesting explanation of his ideas. This explains how and why I had the opportunity to hear what he had to say to the men. I will have to admit he gave me a new insight into an overseer's duties and responsibilities; therefore, I took every opportunity to watch his tactics of management for several months until I was absolutely sold on his methods and saw them begin to get results.

Here are some of the thoughts the superintendent introduced in that first conference; I'll try to quote him:

"The object of these mills, if I understand correctly, is to produce the maximum amount of first class product at a minimum unit cost. To do this we must have carding, spinning, and weaving machinery, and operatives to run those machines. Please fix the thought in your minds that we could not produce this product with carding alone, nor with spinning alone, nor with weaving alone. It takes all of them working in harmony to obtain these results, and let me emphasize the fact that all of my work with you men will be based on that fundamental fact.

"For example, suppose one of the mills has a class of goods which requires a lighter filling than our set-up can make without greatly reducing front roll speed on filling spinning. This reduces filling production to such an extent that we have looms waiting on filling. The logical procedure in such a case is to make the warp one or two numbers lighter, which would enable you to heavy the filling proportionately, thereby increasing filling production *more* than you would reduce warp production, because in most cloths there are more pounds of warp than filling, by 15% to 20%; therefore, you would get more *total poundage* out of the spinning department.

"But usually in such cases the overseer of weaving raises a howl that making the warp lighter will cause him to have more warp breakage or loom stops. Although he does not realize that this change would start up the looms he has stopped, thereby enabling the mill to turn out more poundage. Everything from here on out that does not go to suit him, he attributes the cause to making his warps out of lighter yarns.

"Such an overseer does not take into consideration that it takes carding, spinning, and weaving to produce our product and that the success of the mill as well as his personal success depends absolutely upon the harmonious operation of all those departments.

"What I am trying to explain to you, gentlemen, is that the overseer-weaving, although having full charge of the weaving department and all the responsibilities attendant thereto, also has a responsibility to or for for the carding and spinning departments. Because, having been employed as an overseer of weaving, he certainly would be a total failure in producing goods without the carding and spinning.

"It is just as much to his interest to save a half bobbin of filling for the spinning room as it is for the overseer-spinning to save it. Naturally, gentlemen, the reasoning expounded to you concerning the overseer-weaving applies equally to the overseers-carding and spinning. I hope, therefore, I have made myself clear to you and that you will be governed accordingly in every detail of your management."

Mill President Still Speaking: And you know what, he straightened out the carder and spinner in No. 2 (who I told you were not on speaking terms) the easiest I have ever seen two men brought together. I asked him how he did it, and he told me that it was no problem at all. He simply had the two of them in the office and explained that two men who were working for the same objective, that is, to produce cloth, could not be sore at each other without *both* of them being wrong. But that one of them was *more* wrong than the other. He said he had no idea which one was more wrong than the other, but when he found out which one it was he would ask him to come to the office for further conference.

Now darned if that wasn't a pretty smart way to handle such a situation, because he never had to mention the matter to either of them again. And, do you see, OLD-TIMER, why I would like to write a book about this man's methods of management?

BARBER-COLMAN

M.C.C.

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Send for Bulletin E3156 for complete information on the all-electronic MCC. Learn how it can help to solve your drying problems. Ask your Barber-Colman Representative for specific advice on your requirements.

BARBER-COLMAN COMPANY
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OLD-TIMER: I sure do, Mr. President, and we are confident that many textile operating executives will profit by the OLD-TIMER article we will give them as a result of this most interesting conference with you.

Mill President: Oh no, you don't —I've told you more than I had any idea I would tell anyone. In fact, I have never told anyone except my directors at the meeting when I decided to raise this superintendent's salary considerably out of proportion to salaries paid for comparable positions. Now if you write an article for "Cotton" or TEXTILE INDUSTRIES—that's the new name, isn't it?—some smart guy will be taking him away from me.

OLD - TIMER: Remember, Mr. President, I pledged myself not to mention either your name or your firm's name; therefore, there is no possible way for any reader to even make a fair guess as to where my information came from, and the information you have given me may be the cause of saving some reader his job. OLD-TIMER is confident many operating executives will profit by it; therefore, for the good of the textile industry as a whole, we'd like you to permit us to let them have the benefit of your rather unusual experience.

Mill President: Well, maybe that is the broadminded way to look at it, but I warn you that if you say one word which would lead your readers to the source of your information, the Grant Building in Atlanta will think an atom bomb hit it.

OLD-TIMER: Thank you, Mr. President, thank you very much, and we are sure a lot of our readers would like to thank you too.

Mill President: Never mind that part of it, not at all, if I can be of any help to the textile industry —darn it, sit down again, and I'll tell you some more. Maybe you will believe me yet when I remarked that I could write a book about it.

You know this fellow (the new superintendent) does the most unorthodox things, but they get results, and that is what counts in my book. One of the first things I noticed was that at irregular intervals he would have all the over-

seers from both mills in the office for an informal meeting. That is, he would handle the meeting like he had not called them together to discuss any particular problem, but I noticed he would draw the men out in his conversation to induce them to talk, and when they would get to talking or asking questions among themselves he would just sit back and listen to their conversation.

When, for example, the spinner would contend with the carder that there was not enough twist in the roving, allowing it to break back in the creel, and if they called on the superintendent for a decision, he seldom would give a positive answer right then, but would assure them he would look into the matter and discuss it further with them.

Following these informal meetings he will often take all of the overseers through all departments of the mills, and I understand that sometimes he gives each man a scratch pad with the request that he make notes of any suggestions concerning anything in any department of the mill. These suggestions are put into a sealed envelope and given to a stenographer to copy and then destroy the notes. Therefore, when the typed suggestions are placed on his desk, he has no way of knowing what overseer made any suggestion about any other overseer's department. He claims the men feel freer to say just what they want to say by using this system.

I was not very much surprised when one day I saw the overseer-spinning from No. 1 over in No. 2 spinning room, and vice versa, but I certainly was dumbfounded when a phone call came in for the overseer-weaving in No. 2 and the office boy came back with the overseer-carding in No. 1 mill. When they walked in, I heard the telephone operator say: "The boy made a mistake, Mr. Overseer-Carding, the phone call is for the overseer-weaving in No. 2 mill."

The overseer-carding spoke up and said, "I am the overseer-weaving in No. 2 mill."

Then, I butted in and asked the overseer-carding what the heck he

(*Continued on page* 177)

BARBER-COLMAN

ELECTRONIC TEMCHRON

SIZE COOKING CONTROL

TEMCHRON, the only *completely electronic* time-temperature cycle controller, provides hitherto unattainable accuracy, flexibility, and reliability in the control of size cooking. Identical cycling is assured from batch to batch, for any dial settings, yet simple adjustments permit cycle changes as required by different size formulas. Changes in any part of the cycle — warm-up time, cooking temperature, cooking time, or holding temperature — can be made *by simply resetting calibrated dials.* Lights on the panel indicate when the size mixture is being raised to cooking temperature, when the size is cooking, and when the cooking is completed and the mixture is at the desired holding temperature. Cooking and holding temperatures are independently adjustable within a range of 100°F to 210°F. Length of warm-up time is adjustable from 15 to 90 minutes, and cooking time from 20 to 180 minutes.

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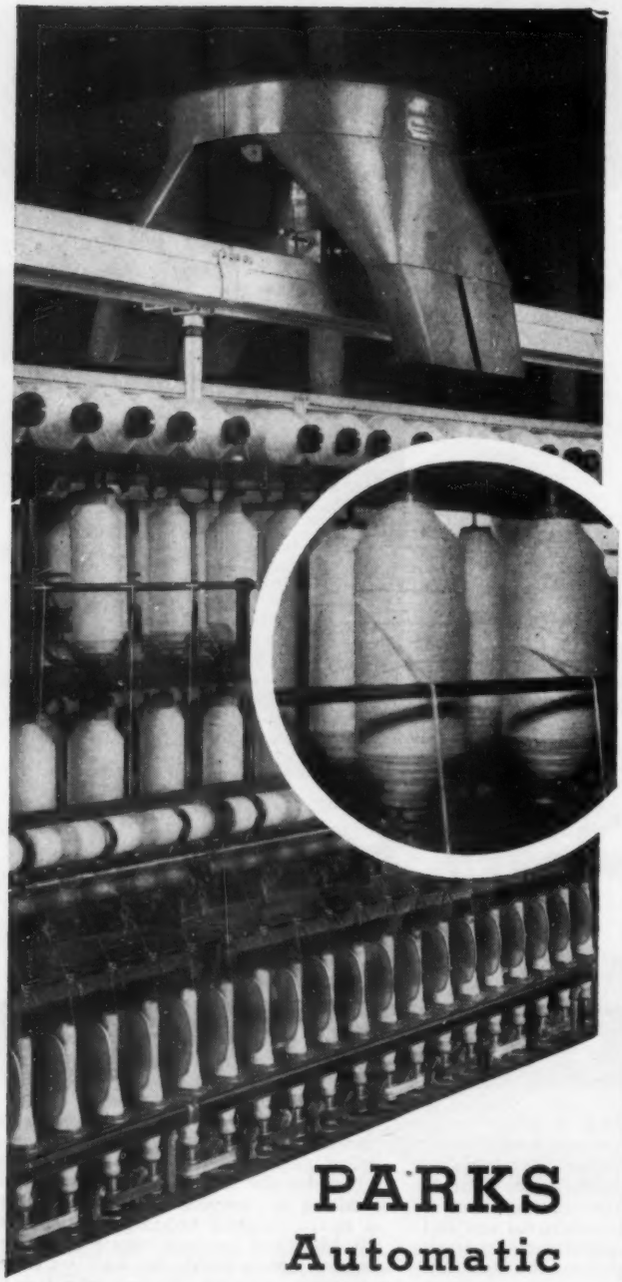

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NEW EQUIPMENT
AND MATERIALS

Doffer Comb Drive

A new type of doffer comb drive, designated the "K & R Doffer Comb Drive," is being manufactured by the A. B. Bullington Co., P. O. Box 1035, Spartanburg, S. C.

Simplicity of design, operation, and maintenance is the outstanding feature claimed for the device. According to the manufacturer, all five of the bearings can be replaced with a minimum of effort by personnel in the mill. Also, the bearings are of standard design and therefore can be procured from mill supply houses and bearing manufacturers, as well as A. B. Bullington Co.

Other features claimed for the unit are as follows:

(1) A comb stroke adjustment which allows not only the lowering and raising of the comb position but permits the increase or decrease of the length of the comb stroke to compensate for weather conditions or characteristics of the fibers being processed. This adjustment also permits a lower comb speed by using the stroke modification to accomplish the desired result.

(2) A positive locking arrangement which eliminates comb slippage and insures a positive and permanent positioning of the comb without the use of set screws. And effective locking is insured even though the comb shaft may be worn or previously scarred by the use of a set screw.

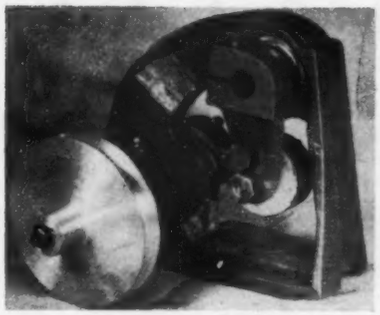
(3) Every moving part of the comb drive is supported on a ball bearing and the only wear that can be present will be in the bearings themselves.

(4) The ball bearing unit eliminates noise and rattle.

(5) The smoothness and efficiency of this unit increases the useful life of the driving medium whether it be a band or belt drive, because it permits a slackness in the driving belt.

(6) The bearings are lubricated with a standard grease gun, on standard bearing lubrication schedules, through standard lubrication fittings.

(7) The entire unit is enclosed in a one-quarter inch cast aluminum cover for protection from dust, fly, and mill waste. In addition the cover prohibits access to the moving parts of the unit while in operation. The cover is easily removed and/or replaced by simply removing one cap screw.



The "K & R" doffer comb drive, with cover removed.

Aluminum Loom Beam Barrels

A new aluminum loom beam barrel has been developed by the Aluminum Company of America, 801 Gulf Building, Pittsburgh 19, Pa.

Added to the advantages of having a permanent loom beam barrel that will easily withstand rough handling as well as yarn pressures, is a definite original cost economy, according to the manufacturer.

The barrels are delivered to the mill slightly longer than the required length, and can be easily finished by a lathe operation which faces the end properly. If an internal casting is used, the mill machine shop can bore the tube the length of the casting face to obtain the desired fit.

The cast iron heads, steel tie rods and shaft of the old beam are reused with the aluminum replacement barrel. This can be done by any one of three methods. The worn out, splintered wood barrel can be turned down to 5½-inch outside diameter and the aluminum barrel slipped directly over it. The two other methods eliminate the wood entirely and attach the aluminum replacement barrel directly to the cast iron head. These two methods are preferable because the light metal contains sufficient strength in itself.

Warp Lubrication Product

Slix is the name of a new series of products developed by Southern Sizing Company, P. O. Box 167, Atlanta 1, Georgia, for the separate application of warp lubricant in warp sizing. The product is being applied from a warp lubricator unit by means of an applicator roll located between the size box and the cylinders of the slasher.

According to the manufacturer, the yarn is starched in the size box without addition of sizing compound, and Slix is applied after the yarns emerge from the size box. The product is said to apply a surface lubricant coating to the yarn, serving as a lubricant on the yarn as it passes through the loom .

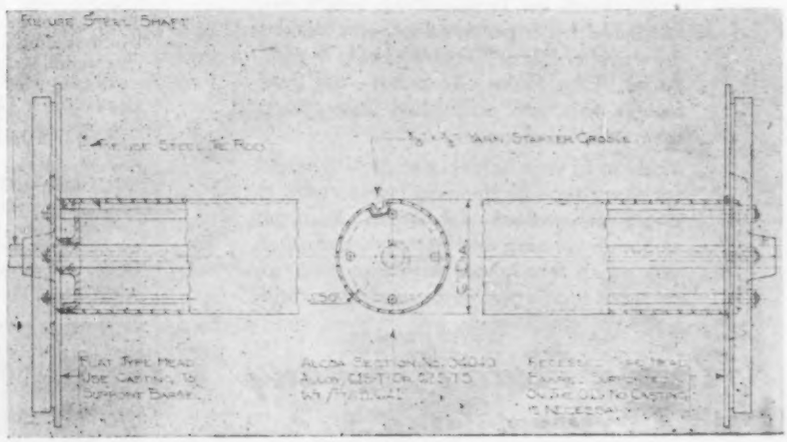
Booklet on Nylon

"Nylon Textile Fibers in Industry" is the title of a new 30-page booklet being offered by the Nylon Division of E. I. du Pont de Nemours & Company.

Industrial uses of nylon are enumerated in the booklet.

Sections are devoted to nylon's properties of strength, light weight, toughness and abrasion resistance,

Sketch showing how aluminum replacement barrels can be used.



DYESTUFFS
ACCO
CHEMICALS

Manufacturers of Dyestuffs
and
Chemical Specialties
for the
Textile Industry

AUGUSTA CHEMICAL CO.
AUGUSTA DYESTUFFS ACCO CHEMICALS GEORGIA

Ragan Rings WITH THE PATENTED WEB
"TAKE OFF" BETTER!

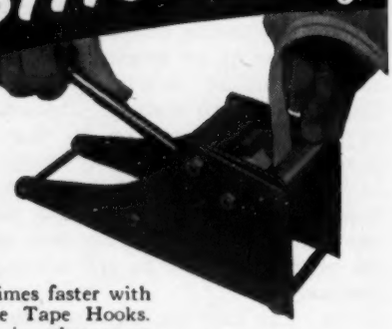
The high-polish finish plus the patented Angle Web on Ragan Rings, which are hardened by a patented process, make the traveller "float"—cut breaking-in time. Ragan Rings "take off" better—get your frames back into production faster. Keep them producing longer.

Made to fit your holders exactly—a model for every type of spinning frame made in angle or straight web styles. You get smoother running and better thread when you equip throughout with Ragan Rings, as have leading mills around the world.

Ragan Ring Company
Atlanta, Georgia

10 TIMES FASTER THAN STITCHING!

SPINDLE TAPE
LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

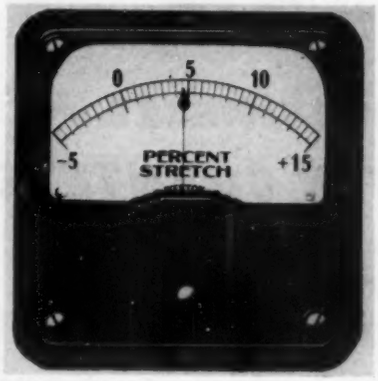
Clipper BELT LACING EQUIPMENT UL

elasticity, low moisture absorption, heat setting, resistance to light, chemicals, heat; and attack by mildew, mold, and insects; non-flammability, and non-toxicity.

Instrument Measures Stretch or Shrinkage

To provide more accurate control in processes wherein materials are subject to change due to differences in the rate of travel, a new Speed-Ratio tachometer has been announced by the Weston Electric Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, N. J.

The tachometer includes a special speed-ratio indicating instrument



which operates in conjunction with two small d-c generators to convert mechanical rotation into measurable electrical quantities.

The generators are simply connected to the input and output drives of the machine, and wired to the ratio indicator. This indicator, or ratio meter, is calibrated in whatever terms are desired; such as % stretch, % shrinkage, % elongation, etc. The indicator can be mounted at any position most convenient for easy reading by the operator; and where required, an additional indicator can be wired into the circuit for use at a distance.

Typical of the operations to which the tachometer is now being applied is that of indicating per cent stretch at all times during sizing operations in the textile industry, and to indicate the shrinkage of fabrics in the sanforizing process.

Loom Picker

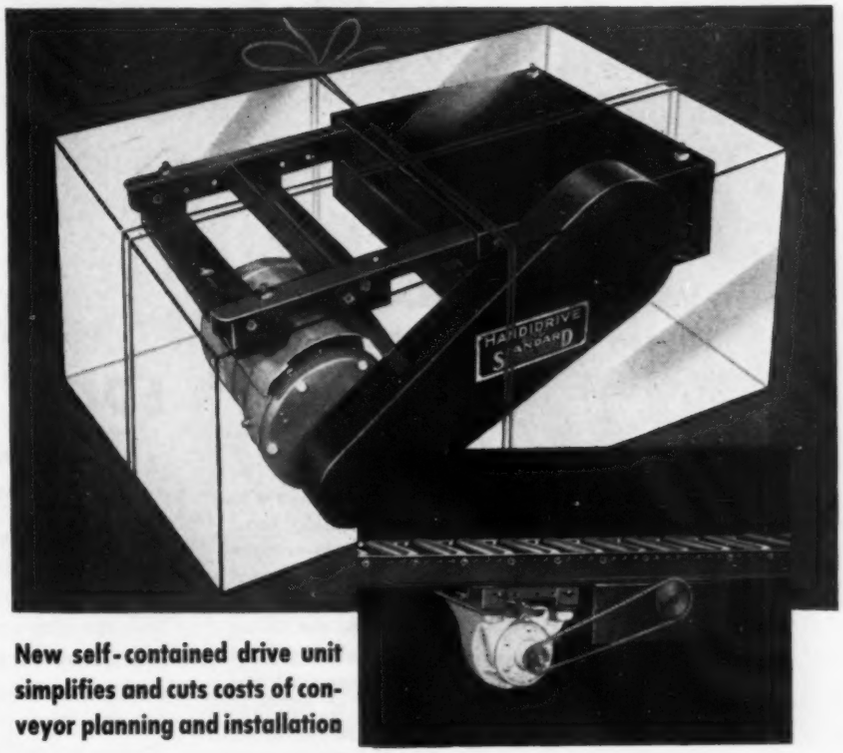
A new, high-speed loom picker has been announced by Graton and Knight Company, Worcester, Mass.

The nose of the heavy-duty "Steel Hide" picker consists of layers of oak-

Announcing the new Standard

HANDI-DRIVE

. . a "power package" unit for all types of roller and belt conveyors



New self-contained drive unit simplifies and cuts costs of conveyor planning and installation

Here it is! A packaged power unit that gives every conveyor user the opportunity to be his own layout engineer — to change his conveyor system to suit varying plant conditions in a minimum of time!

Converts gravity conveyors to live belt or roller conveyor quickly . . at low cost

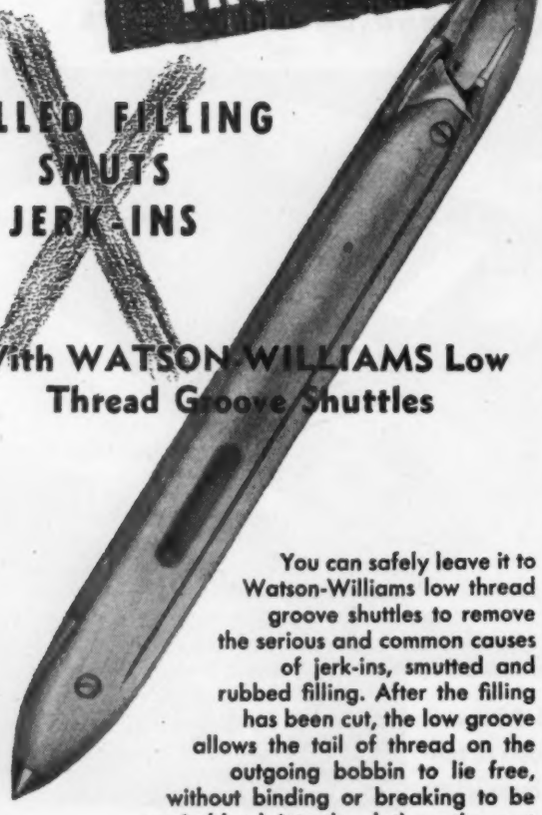
The Handi-Drive is a self-contained drive unit for applying tractive power to gravity conveyor belt or rollers. Equally important, using standard units you can build a conveyor system custom-planned to your individual plant needs. Standard units are stocked at the factory — you can get them now!

If you want to convert your present gravity conveyors to powered units — or if you want to install your own new system . . . send for the Handi-Drive Bulletin No. C-38. It gives you complete design information and prices — tells you how to lay out your system, gives complete data on inclines, belt and roller widths, curves, weights to be handled and types of packaging or units to be moved. Write: Standard Conveyor Company, North St. Paul, Minnesota.

SEND FOR HANDI-DRIVE BULLETIN

Standard
GRAVITY & POWER
CONVEYORS

CROSS OFF THESE TROUBLES



~~ROLLED FILLING~~
~~SMUTS~~
~~JERK-INS~~

With WATSON-WILLIAMS Low Thread Groove Shuttles

You can safely leave it to Watson-Williams low thread groove shuttles to remove the serious and common causes of jerk-ins, smutted and rubbed filling. After the filling has been cut, the low groove allows the tail of thread on the outgoing bobbin to lie free, without binding or breaking to be carried back into the cloth on the next pick. Also, the low groove allows the filling to fall slack when picked out from the magazine end, instead of being rolled, or rubbed and smutted by the lower face of a conventional shuttle. Let your Watson-Williams representative show you how to eliminate these difficulties once and for all.

WATSON-WILLIAMS MANUFACTURING CO.
MILLBURY, MASS.

SOUTHERN REPRESENTATIVES: Watson and Desmond, Box 1954, Charlotte, N. C., John W. Littlefield, 810 Woodside Bldg., Greenville, S. C., Walter F. Daboll, Jefferson Bldg., Greensboro, N. C. **WESTERN REPRESENTATIVE:** Arthur J. Bahan, P.O. Box 245, La Porte, Indiana. **NORTHERN REPRESENTATIVE:** Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

PRODUCTIMETER
LOOM PICK COUNTERS

Register exact production of each weaver on each 8-hour shift

Plan now to install them on your looms and benefit from the many advantages offered . . . All three shifts in one housing, just turn the knob and counter is ready to register the pick count for the next shift . . . Shutter mechanism makes tampering impossible, prevents "build-up" of production figures . . . Center drive permits application on any loom, right or left side . . . Made in 3 and 4 figures capacity . . . Reset or non-reset . . . for 2 and 3 shifts.

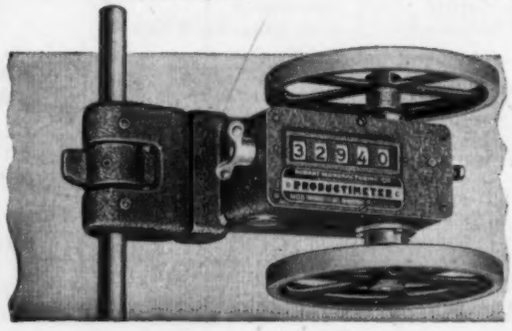
TEXTILE CATALOG
No. 50
Sent on Request!

Illustrates and describes Pick & Hank Counters, Lineal Measuring Units, Revolution, Stroke, Electric and Predetermined Counters.

DURANT MANUFACTURING COMPANY

1973 N. Buffum St.
Milwaukee 1, Wis.

173 Orange Street
Providence 3, R. I.



Model 5-T-90-1 Lineal . . . Measures full yards.

The stainless steel insulated cooking and storage size kettle, Type 316, shown above, is manufactured by The Textile Shops, Spartanburg, S. C. Savings in heat loss and more uniform temperature control are advantages claimed for these insulated kettles.

tanned leather and rawhide, cemented together and bonded to the steel shell. According to the manufacturer, the natural resiliency of laminated leather plus the strength and rigidity of the steel shell, gives exceptional shock absorption and resistance to deformation.

The loop is of special construction, leather cushioned at the front to give added resistance to impact and rubber lined at back to assure a firm fit on the stick. A formed lip on the loop prevents the picker from "rocking." The picker cannot work loose or twist off center, the announcement indicated.

Book on Wool Mill Management

A new book entitled *Machinery, Management and Control in a Wool Textile Factory*, by D. R. H. Williams, was recently published by Emmott & Co. Ltd., 31 King St. West, Manchester 3, England.

Numerous illustrations, diagrams, and tables are incorporated in this book which contains chapters on: machinery layout, power, heating, and lighting; routine for processing orders; mill books and departmental records; planning; discussion of the various processes from warping to finishing; designing; selling; and other subjects.

1948 Safety Directory

The second annual edition of *Best's Safety Directory* has been announced by Alfred M. Best Co., Inc.,

ARE YOUR SPINNING AISLES "SKATING RINKS"?

. . . avoid hazards by DRY CLEANING Your FLOORS with the TENNANT System

Tennant Floor Machines are available in various sizes for 8", 12" and 16" drum accessories.

If you've had accidents, reduced worker efficiency and slumps in morale due to slippery, oily floors . . . then here's a proved, practical answer: *fast, mechanized DRY-cleaning with the Tennant System.*

As hundreds of mills know from experience, the Tennant System eliminates scrubbing and its *hazards . . . keeps* your floors clean, bright and dry . . . costs *less* to use.

The TENNANT System

1. RESTORES! Brings your dark, oil-soaked floor back to life by removing rough, grimy topwood fibers. Provides a dry, sound, vigorous surface.

2. HARDENS! Fast, effective sealing process fills, binds and hardens floor surface. Increases wear-resistance, durability. Resists soilage.

3. DRY CLEANS, eliminates scrubbing! Saves hours of hard work and cuts cleaning costs. Makes floors extra-bright, clean, smooth. You'll be amazed at the results!

The way to finer floors
TENNANT
Floor Maintenance System

The Tennant System ENDS SCRUBBING and can be used throughout your mill.

MAIL THIS COUPON FOR DETAILS

G. H. TENNANT CO.
2585 N. 2 St., Minneapolis 11, Minn.
Without obligation please send Bulletins describing the Tennant System; also photos, comments from mills, performance data, etc. *What mills in our vicinity use the Tennant System?*

Name_____
Address_____
City_____ State_____
☐ Cotton ☐ Woolen ☐ Silk-Rayon
☐ Knitting ☐ Finishing

Hubbard stainless steel bobbins

corrosion resistant stainless steel

for low cost efficient operation

Resistance to corrosion . . . non-absorption of dyes . . . and easy cleaning are the important advantages these Hubbard bobbins give you. Of electro-welded stainless steel construction, these bobbins also provide rigidity and strength to meet all operating requirements. Write for complete information.

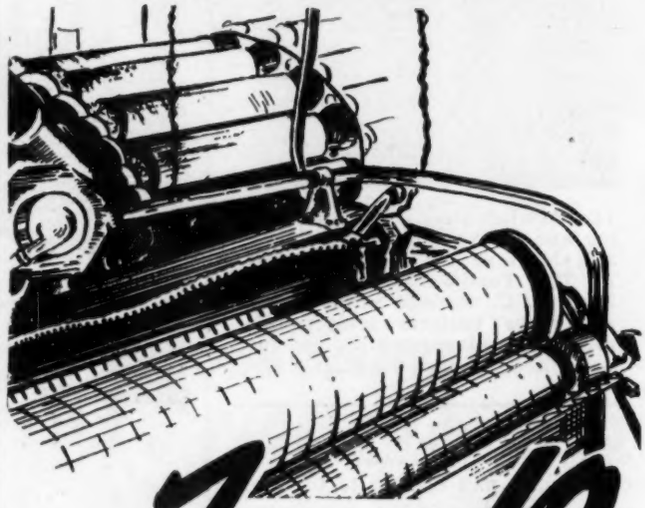
HUBBARD SPOOL COMPANY
1627 CARROLL AVENUE
CHICAGO 12, ILLINOIS

STAINLESS STEEL BOBBINS . . . MAGNESIUM
ALLOY WARP BEAMS . . . BEAM HEADS . . .
COMBINATION WOOD AND METAL JUTE BOBBINS

Hubbard

Since 1912 Manufacturers of Spools and Related Products

There's a *Reason* why NON-FLUID OIL is preferred



in 7 out of 10 CARDING ROOMS

. . . . . And the reason is this: NON-FLUID OIL stays in bearings until entirely consumed . . . instead of dripping and leaking like liquid oil. NON-FLUID OIL protects the close and accurate adjustment of Doffer and Top Flats insuring stronger, cleaner, more even sliver. And you save money, too, because NON-FLUID OIL goes 3 to 5 times further than ordinary oil. Send for Bulletin T5TI and free, testing sample of NON-FLUID OIL.

NEW YORK & NEW JERSEY LUBRICANT CO.
292 MADISON AVE., NEW YORK 17, N. Y.
SOUTHERN DISTRICT MANAGER: Falls L. Thomasen, Charlotte, N. C. WORKS: Newark, N. J. WAREHOUSES: Charlotte, N. C.—Greenville, S. C.—Atlanta, Ga.—Providence, R. I.—Detroit, Mich.—Chicago, Ill.—St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

NON-FLUID OIL
TRADE MARK REGISTERED

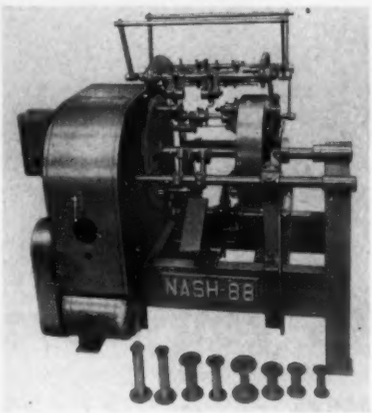
75 Fulton St., New York 7, N. Y. (Price, $5.00.)

The main part of the directory contains concise information on many hundreds of recognized safety, first-aid, sanitation and fire protective products and devices.

A cross index is provided to assist users of the book in locating devices required.

Bobbin Refinisher

Rapid and uniform refinishing of bobbins on a definite schedule is claimed for a new, automatic machine introduced by J. M. Nash Co., 2360 N. 30th St., Milwaukee, Wis. Resembling the larger machine used



for many years by rayon manufacturers, the new bobbin refinisher is designed for refinishing operations in rayon cloth mills having problems arising from rough bobbins.

According to the manufacturer, the No. 88 refinisher will perform all refinishing operations at the rate of ten bobbins per minute.

Shuttle Improvements

A low thread groove shuttle which is said to eliminate the hazards of jerk-ins, smutted, and rubbed filling has been developed by Watson-Williams Mfg. Co., Millbury, Mass. This shuttle carries the filling thread down below the point of contact between the shuttle and the binder leather. It also lowers the thread below the feeler slots to eliminate the possibility of the thread catching on the feeler as it enters and leaves the shuttle.

Other Watson-Williams developments include interchangeable shuttle eyes.

Also designed for cotton weaving is the CI-41 shuttle eye with the inner hook and outside lock which permits quick threading and keeps the thread constantly in place.

Now you can have the last word in Top Rolls for Spinning and Roving Frames

We were not willing to make this announcement until we were thoroughly satisfied with actual mill performance of a new and vastly improved ball bearing top roll which you see pictured below (cut-away photo).

How would you like to improve the efficiency of your frames with any one of the following advantages offered by this new ball bearing top roll . . . you get ALL of them:

1. FRICTION ELIMINATION . . . more than 90% of the friction which directly opposes rotation of the common top roll is eliminated, resulting in better quality yarn. Materially reduces amount of power required to drive the frame.
2. BIG LABOR SAVING. No daily oiling of rolls. Runs *3 to 5 years* between lubrications.
3. SEALED OPERATION. Neoprene seals assure that lubricant is kept in and foreign matter kept out.
4. LESS ROLL PICKING required. No oil or grease about top rolls, saddles, or cap bars.
5. STOP ALL WEAR on cap bars and saddles, as all "live" contact points are eliminated.
6. COTS LAST LONGER due to rolls' "free" rotating qualities and also to the fact that there is no oil to work out on the cots.
7. BUFFING SIMPLIFIED. No special fixtures or gadgets required.

FREE CUT-AWAY SAMPLE

That's the best way for you to appreciate what is now available, and upon receipt of your request made on your mill letterhead and giving your title, we will send you a full-sized roll for inspection. This offer is limited.

Atlanta Machine Works

98 Piedmont Ave. S.E. **Atlanta, Ga.**

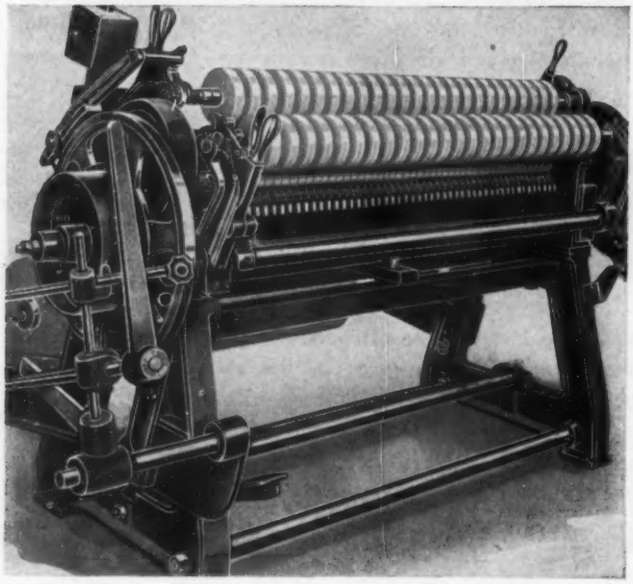
Represented by

JOHN C. TURNER
Walton Bldg.
ATLANTA, GA.

TEXTILE SPECIALTY CO.
P. O. Box 1297
GREENSBORO, N. C.

Camachine 26-3A

converts tacky fabrics into narrow rolls with clean edges



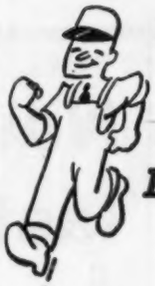
Camachine 26-3A is the ideal machine for fast, dependable production of clean-cut *narrow* rolls of all types of impregnated, coated or tacky fabrics and paper. Score-cut slitting tends to seal the cut edges, greatly reducing fraying and linting. The use of two rewind shafts assures *positive separation* of the finished rolls. This machine converts web as wide as 56" into strip as narrow as ½" (or ¼" with special slitters), and produces top quality rewound rolls up to 17¾" diameter. For complete information on Model 26-3A, and other Camachines for the textile industries, write to:

Cameron Machine Co., 61 Poplar St., Brooklyn 2, N. Y.

Camachines

FOR FAST, TOP QUALITY ROLL PRODUCTION

...the world over



Takes *less* Time

for Loading, Heating, Lacing, Doffing, Cleaning

Gives you *More* Time *for the actual dye runs which build your profit*

AND it pays its way handsomely by cutting water and steam costs lower than ever. Everything *YOU'VE* ever wanted in a dye box has been incorporated in

The New BLICKMAN Fully Enclosed Stainless Steel Dye Box

Send for further information

S. BLICKMAN, INC.

203 GREGORY AVENUE • WEEHAWKEN, N. J.

Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

AN

EXECUTIVE VIEWS

THE NEWS IN TEXTILES

This department is prepared by a man who is closely identified with the textile industry.

About Women

The Bureau of Agricultural Economics, U. S. Department of Agriculture, apparently believes that it has succeeded in solving one of the questions which for countless ages has puzzled mankind. At least the Bureau had enough confidence in its findings to publish a booklet recently which purports to answer the question, "What do women look for when they go out shopping for textiles?"

The B. A. E. study is called, "Women's Preferences Among Selected Textile Products." It is based upon the results of a survey in which interviewers questioned a "sample" of the female population. The report is sprinkled with tables which throw considerable light on what women are buying and why they buy it. It contains valuable information for the textile manufacturer, the selling agent, and for all branches of the garment industry and the retail trade.

Some of the answers the women gave indicated popular misconceptions with regard to fibers and fabrics and show the need for additional light on these particular points. Other answers show the significance attached to certain qualifications and thereby point out the direction in which advertising might be slanted effectively.

Buy Ready-Made

For example, from the standpoint of the potential market, it is interesting to note how many women buy ready-made articles of clothing. Here is the way the situation stacks up as recorded in the study, with the figures being expanded on a basis of a sampling covering approximately 1,700 women:

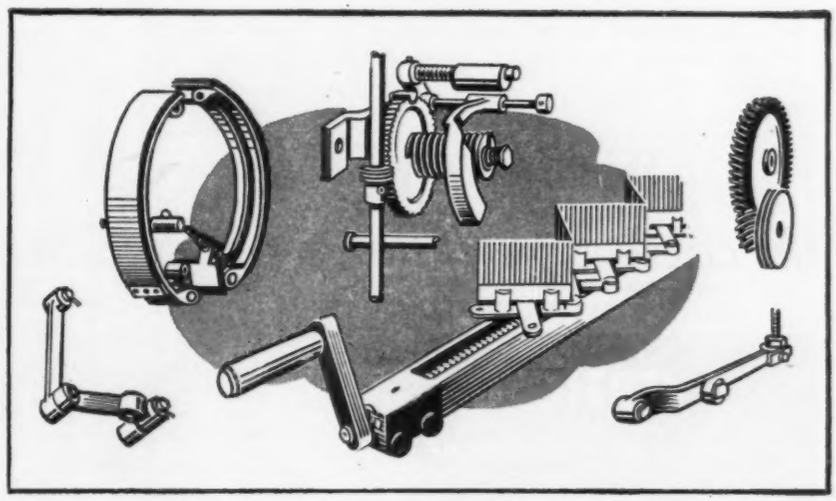
Item	Buy Ready-Made Per Cent	Millions
House dresses	59	27
Summer street dresses	79	36
1-piece winter street dresses	78	35
Short-sleeved blouses	55	25
Summer slips	87	39
Nightgowns and pajamas	74	33
Special coats for rainy weather	28	13
Full-length stockings for street wear	97	44
Anklets	39	17
Aprons	30	13

It should be noted that the women

Good Warps are made on Good Beams

We make Warper Beams for Cotton and Synthetics • • • Also Loom Beams

Genuine Replacement Parts for



all types of Saco-Lowell Warpers

We are the official source of supply for Saco-Lowell Warper replacement parts. We also have complete tooling, plus trained personnel to supply all replacement parts for

ENTWISTLE WARPERS

Supplying your needs for replacement parts of the above warpers—as well as our own make—is an important and very active part of our business. We can assure you prompt attention and intelligent handling of your inquiries.

Cotton and Rayon Beam Warpers
Ball Warping Machines
Narrow Fabric Warpers
Intermediate Dresser Stand for Woolen and Worsted Warp Yarns
Expansion Neck Reeds
All types of Expansion, Warper, Beamer and Slasher Combs
Replacement parts for Saco-Lowell and Entwistle Warpers
NEW BEDFORD, MASS.
ALLEN COMPANY

REQUEST CATALOG of Warpers, Beams, and Parts List.

ALLEN COMPANY

General offices—156 River Road
New Bedford, Mass.

Representatives in all Textile Localities and all Principal Countries of the World

not buying ready-made articles do not necessarily "make their own." They may utilize substitutes or they may do without. For example, in the case of "special coats for rainy weather," the 72 per cent who do not buy ready-made may use umbrellas or they may wear coats not intended for rainy weather.

Of course, the figures may also indicate that a substantial percentage of women do *not* buy ready-made raincoats because they are not satisfied with the products offered, and thus the way may be open for the manufacturer who offers a satisfactory product and knows how to merchandise it.

Similar information was obtained from some 1,500 homemakers showing how many women buy ready-made items of household textiles, with the results being expanded to give an estimate of the national picture. Here's what the Bureau found:

Item	Buy Ready-Made Per Cent	Millions
Tablecloths and/or place mats for everyday use....	47	18
Bedspreads	86	33
Part-wool blankets	59	23
Dish towels	33	13
Light-weight curtains	74	28

Although it might appear that the number of women interviewed was not large enough to give a representative sample, the Bureau's method of selecting the areas to be covered, as described in the study, appears to be sound and logical.

With the keen competition now existing between the various fibers, it is interesting to note what the survey shows with regard to women's preferences. When purchasing house dresses, 86 per cent of the women questioned preferred cotton, while only 3 per cent preferred rayon, with the additional 11 per cent giving a "no preference" reply or failing to answer the question.

However, rayon and cotton broke even for summer street dresses, each scoring 28 per cent of those questioned. Coming to one-piece winter street dresses, we find that 42 per cent desired wool, 29 per cent thought rayon was better, and cotton ran a poor third with 2 per cent.

But when it came to short-sleeved blouses, rayon took top honors with 56 per cent, while only 23 per cent of the women surveyed preferred cotton. Nylon, as could be expected, was far ahead in stocking preferences.

All told, the survey gives a pretty good idea of fiber preferences in connection with 16 items of clothing and household goods. You may not agree with the findings, but you will find the results interesting.

What They Look For

Of particular interest is the information contained in the study with regard to the characteristics women say they seek in selecting certain apparel and household articles.

When buying house dresses and blouses, it seems the ladies think first of whether or not the article will wash and iron well. Next, they think of durability, and somewhere further down the line they consider price. That, at least, is what the study indicates.

Generally speaking, when women are purchasing house dresses, summer street dresses, one-piece winter street dresses, short-sleeved blouses, or curtains, they think of these things, although the order of importance varies with the item purchased:

Good laundering qualities
Durability
Appearance
Whether practical and comfortable
Cost
Will not fade in sun
Right weight
Will dry-clean well
Out of the above list, the most pre-

We'll help you engineer the correct pump to your application

VERTICALS

VERTICAL DEEP WELL AND CLOSE-COUPLED TURBINE PUMPS—HYDRO-FOIL PROPELLER AND MIXED FLOW PUMPS—MINE PUMPS—HI-LIFT PUMPS—UNDERWRITERS' APPROVED VERTICAL FIRE PUMPS—DOMESTIC FIRE SYSTEMS.

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Bulletins describing individual applications of each of these types of pumps are available on request.

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FOOD MACHINERY CORPORATION

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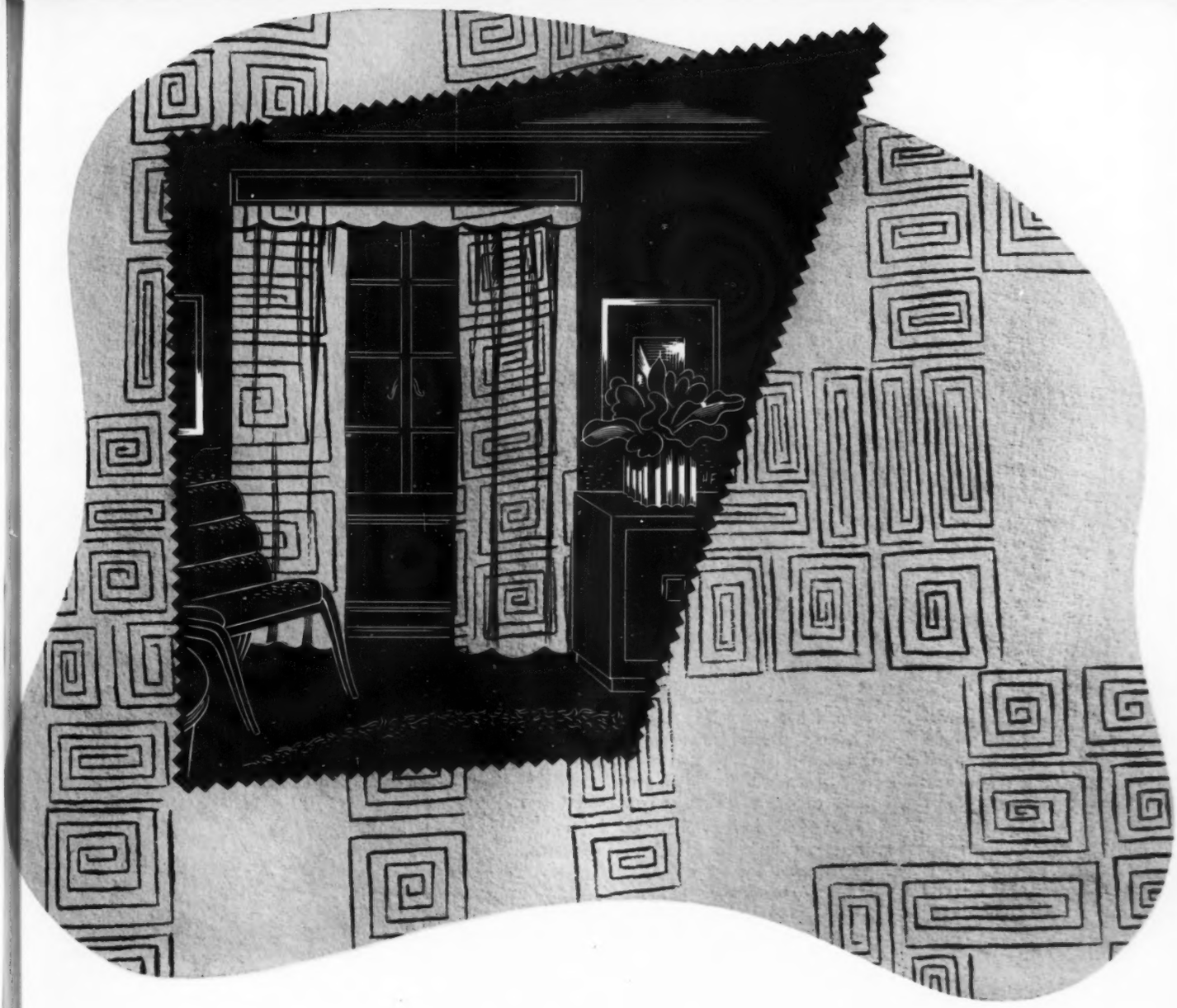

HOW WOULD YOU PRINT THIS PATTERN ON VELVET?

And how would you hold the soft, deep pile of the fabric and protect its hand?

To print this Shantung design by Vera for F. Schumacher and Company, Printex Corporation of America used the new, low-crock Aridye® Black FK, cut 1:5 with Aridye clear 6214-2.

By using an Aridye Pigment Color, Printex wisely avoided the risks and additional expense found in the ageing, steaming, soaping or other after-treatments that conventional dyes require.

The dyed fabric was merely screen printed, air dried and heat cured—a 1, 2, 3 process that was easier, quicker and safer and resulted in no impairment of the velvet's pile and hand.

This high-style, high-quality decorator fabric is an outstanding example of the reason why leading screen and roller printers use Aridye Pigment Colors for unusual as well as everyday printing jobs.

CHECK THESE EIGHT ADVANTAGES

Sharpness of Mark • Exceptional Fastness to Sunlight
Uniformity of Shade • Fastness to Washing • Economy
Bright Colors • Ease of Application • No Impairment of Hand

Aridye
Pigment colors

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THE MOST OUTSTANDING SOUTHERN INDUSTRIAL EXPOSITION!

APRIL 5-6-7-8, 1948

ATLANTA MUNICIPAL AUDITORIUM

ATLANTA - GEORGIA

★

Executives, supervisors, engineers, inspectors and plant personnel are cordially invited to attend the Third Southern Machinery and Metals Exposition to see operating exhibits of new products, the latest machinery and materials handling equipment, production tools and machining operations, welding demonstrations and new materials. The Industrial South will find this great annual Exposition geared to its needs and the focal point of contact between manufacturers and Southern industry.

More than 140 industrial firms from all over America will exhibit tools, speed reducers, products for the textile industry, foundry supplies, materials for the pulp and paper and chemical industries, testing and inspection instruments, wood working machinery, equipment used in the food and processing industries, machining equipment, mill supplies, maintenance equipment, furnaces, boilers, grinders, safety equipment, bearings, lathes, ferrous and nonferrous metals, cutting machines, lubricants, electric products, hydraulic appliances, trailers, dies, jigs, castings and industrial products.

Georgia Tech, in conjunction with Southern Technical Societies, will conduct the "Southern Industrial Conference on Machinery and Metals." The subject matter for discussion will include: Tool Design, Machine Design, Metals, and Production. Conducted Plant Tours through the most modern processing, fabricating and steel plants in the Atlanta area will also be a special feature of the Third Southern Machinery and Metals Exposition.

Don't miss this great Southern Machinery and Metals Exposition, the "Southern Industrial Conference" and Plant Tours. Plan NOW to attend and see the latest methods of streamlining manufacturing operations, reducing production costs, and improving quality. For immediate information about exhibit space, complimentary tickets, hotel reservations, and list of exhibitors, write NOW to the Exposition Management, at the address given below.

Third

SOUTHERN MACHINERY & METALS EXPOSITION

267 E. Paces Ferry Road, N. E. Atlanta 5, Georgia

dominant characteristics were good laundering qualities, durability and good appearance.

Cotton vs. Rayon

What the women who were interviewed thought about cotton and rayon, and the respective good points about each, is also of interest.

From the standpoint of cotton, these, in the order listed, are the most common points of preference mentioned: cotton is durable and wears well; it looks well after laundering; it is easy to launder.

Points of preference for rayon, in the order listed, were as follows: it is dressy and good looking; it feels good next to the skin; it comes in pretty colors and prints.

So regardless of whether or not you agree with the results of the study, our suggestion is that you get a copy from the Bureau of Agricultural Economics, or from one of the textile associations, and that you spend a little time looking it over. It will be time well spent.

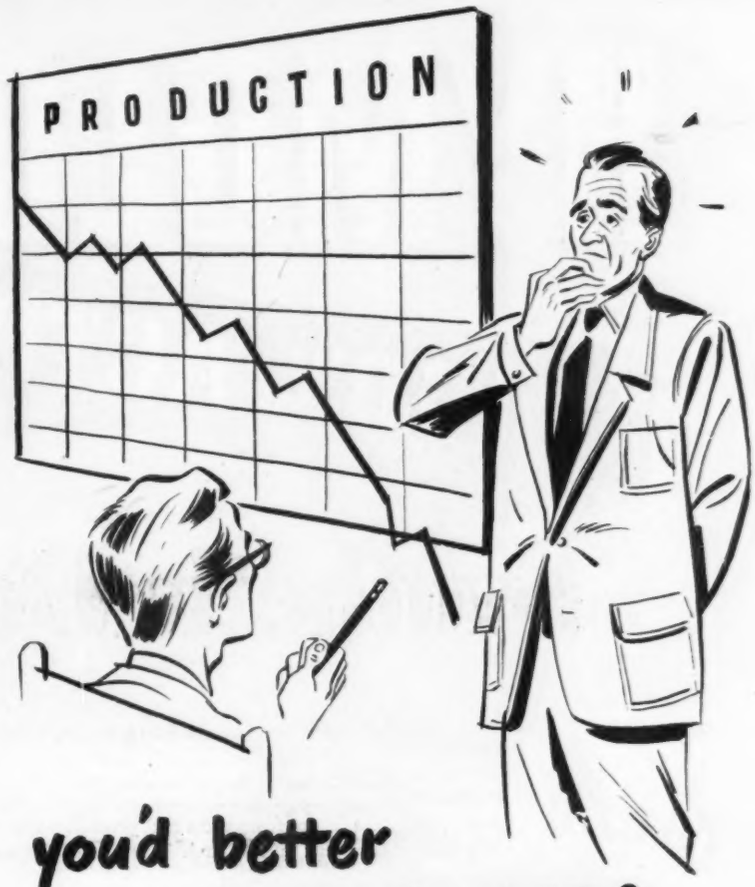
Sample Display Room At QM Purchasing Office

The New York Quartermaster Purchasing Office, 111 East 16th Street, New York City, has opened a new sample display room as part of its recently accelerated industrial mobilization program, according to an announcement by Colonel L. O. Grice, commanding officer.

The exhibit emphasizes closer cooperation between government and industry in providing for military requirements. It has been planned and arranged to supply the latest information available covering Quartermaster items for current procurement and will also assist in procurement planning with regard to commodities required by the Army and Navy for future use.

According to Colonel Grice, the sample display room was developed by the Army in response to a long felt need "to demonstrate what the military services require of contractors who undertake the responsibility of producing and supplying items to meet those requirements."

The sample display room will be maintained on a current basis, with frequent changes in content.



you'd better contact COMER!

Yessir, when that production curve begins to sag and you wish you had more good drawing frames, or cards, or slashers maybe, then it is time to contact COMER.

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HYMOLON K is stable in hard water, acids and alkalis and is compatible with soap. It prevents scum formation and promotes more level dyeing. Hymolon K is a *liquid* detergent and as such is preferred for ease of handling and use.

ECONOMICAL

HYMOLON K is 100% active, contains no water, salts or cheap alkalies, and shows about 4 times the scouring of a good soap. Accordingly, there is less material to ship and handle. Hymolon K economically combines in one product good wetting-out and excellent detergency. The concentration required varies with the type of operation, usually 0.1 to 0.4% on the weight of the goods.

VERSATILE

HYMOLON K is recommended for scouring and dyeing operations for all types of textile fibers; for unsurpassed detergency of all forms of woolens; and for the kier boiling of cotton. It gives a heavy, continuous, foamy bath and is especially useful in cleaning operations where emulsification and dispersion of spinning waxes or oils are of importance.

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Rayon Oils & Sizes	Conditioning Agents	Cationic Softeners
Nylon Oils & Sizes	Scrooping Agents	Cotton Warp Dressings
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Finishing Oils	Delustrants	Weighting Agents
Synthetic Detergents	Leveling Agents	Mercerizing Penetrants

HART PRODUCTS CORPORATION
1440 Broadway, New York, N. Y.

Hart Products

based on research

Cloth Room Practices

(*Continued from page* 100)

type machine. The goods pass between the operator and a light box so the imperfections can be clearly seen. All imperfections are corrected or cut out.

Each loom roll is wound on a tube and is separated and packed individually. A cord or tape is tied around each end of the roll, two or three inches in from the end. Each inspection machine has a measuring attachment to measure each roll and mark it accurately.

This method of preparing the individual rolls for shipment has its faults. Inspectors are well paid for inspecting goods, but they spend about half this time tying and marking each roll after inspection. If they could inspect the whole roll without separating each loom roll, production would be increased one hundred per cent.

The large roll that has been inspected should be taken to a special re-rolling machine. The roll is usually placed in a cloth roll stand, and the goods are unrolled at a constant speed into a scray about six or eight feet long. From the scray, the goods are wound on a tube. This tube rests between surface winding rolls that run at a constant speed. A stop motion operates to stop each roll when the seam is exposed on top of the roll so the operator can pull it out. The finished roll is placed on a table back of the machine. The new roll is started, and the operator can then tie the ends of the finished roll, and mark it while the next roll is being wound. A machine of this type can save much time and labor.

Fancy Fabrics

Little has been mentioned about handling material made on box looms, or Jacquard looms. Marquisettes and dotted Swiss are made on box looms, and the loop threads between the patterns must be cut off. This is accomplished on what is called a float-thread-shear. If the pattern calls for threads in the warp, these must also be cut off. A loop cutter is used for this purpose. The warp

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loops are on top of the filling loops so that they can be cut open in one run on the loop cutter before being sheared to remove both the filling and warp loops. Handkerchief cloth, shirting, and dress material requires this type of handling.

The loom rolls are sewed together and rolled in a large roll about 36" in diameter. This roll is held in cloth roll stands and if there are warp floats, they are given one run through the loop-cutter. This machine has a bar equipped with knives that overlap in the middle and point toward the selvages. The knives vibrate from side to side at a high rate of speed. Each knife has a knob on the point to prevent it from cutting the cloth, but it is small enough to slip under the floats and cut them.

The length of the float determines the size of the knob. On long floats a large knob can be used, and on short floats, a small one can be used. No floats under a half-inch long can be cut successfully. The larger the knob, the less the chance of the knives cutting the goods.

After the warp floats are cut, the cloth is taken to a float-thread-shear where it is run twice to cut the hanging threads down close to the pattern. The ends must be left about one-eighth of an inch long so there will be no danger of the ends being pulled through to the face during finishing, and spoiling the pattern.

Handkerchief goods can be run on a regular shear the same as is used for grey goods. The vacuum will raise the threads to be cut off.

Marquisettes and dotted Swiss have most of the floats in the filling. These floats are removed by the float-thread-shear, and the number of re-runs depends upon the pattern. The goods must have sufficient tension lengthwise to render the filling threads loose enough to be cut off. Spreader rolls should be used to help keep the width normal.

There are several attachments on the market for cutting open the selvage loops left by box looms. Old model attachments were not very successful because they be-

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Newsworthy items for textile technologists and production men

March, 1948

Get Superior and *Permanent* Softening on Your Rayon, Acetate, Bemberg and Cotton Textiles

The Onyxsans assure a permanent, lofty, soft hand on all types of constructions involving these fibers. These cationic surface-active softening agents produce these effects because of properties imparted to the interior of the fibers. They do much more than superficial surface treatments can possibly achieve.

The Onyxsans are substantive to textile fibers, acting like dyestuffs and making themselves a *permanent* part of the textile, on rayon, acetate, bemberg and cotton. On Aralac, silk, wool and other fibers, they impart equally attractive hands.

NEW DEVELOPMENTS

For Further Details Write Onyx

Looking for a Good Size and Stiffener for Ribbons? Then you'll find Xyno Resin AA40 most satisfactory. This versatile aqueous dispersion of a vinyl resin requires no curing. It dries to a clear, tough film without impairing luster. No changes in operating procedure are involved in its use. No. 73

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Improve Fluffiness of Dyed Wool Fabrics while you improve dye level by using Mapromol HSY as a dye auxiliary. This effective softening agent gives a dry but soft, lofty hand on all types of textile fabrics. Does not affect light fastness of dyed fabrics. No. 74

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Faster, More Dependable Pasting up of Dyes is assured by NSAE Paste—the Onyx anionic wetting agent stable in acid solutions. In high concentrations, this material is one of the most effective penetrants available. No. 75

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Non-Ionic Scouring Assistant for Acetates and Rayons. Neutronyx 330 is one of a series of non-ionic surface-active detergents with exceptional emulsifying properties. It is being used on this type of scouring with highly gratifying results. No. 76

Durable *Economical* Water Repellency

Compared with ordinary fugitive water repellent finishes, Repel-O-Tex D3 and D4 insure a definitely superior and lasting effect at lower cost. Textiles treated with these two complementary materials fall well within the limits of accepted standards of durability after the usual wash and dry cleaning tests. They are also made stain and perspiration resistant.

Cotton-rayon, acetate-rayon and many all rayon and acetate constructions are easily treated in the jig, pad or quetsch to provide durable repellency. The effect on other textiles is less lasting.

No curing, washing or any other after-handling is involved in the treatment. Onyx Technical Data Sheet #2-T carries the complete story of low cost, durable water repellency with Repel-O-Tex D3 and D4.

The Onyxsans are easy to apply in the print washer, jig, dye beck, quetsch or starch mangle, and produce their characteristic effects with surprisingly small quantities.

The story of the Onyxsans has been brought up-to-date in the new Onyx Technical Bulletin TX-1. This informative manual covers the history of these outstanding softening agents from their inception nearly ten years ago to the latest addition to the series. Major advantages, applications and the chemical and physical characteristics of each member of the family are described in detail. If any of your products call for softening action, you will find Bulletin TX-1 very helpful. We shall, of course, be glad to supply samples of any of the Onyxsans for plant-scale tests.

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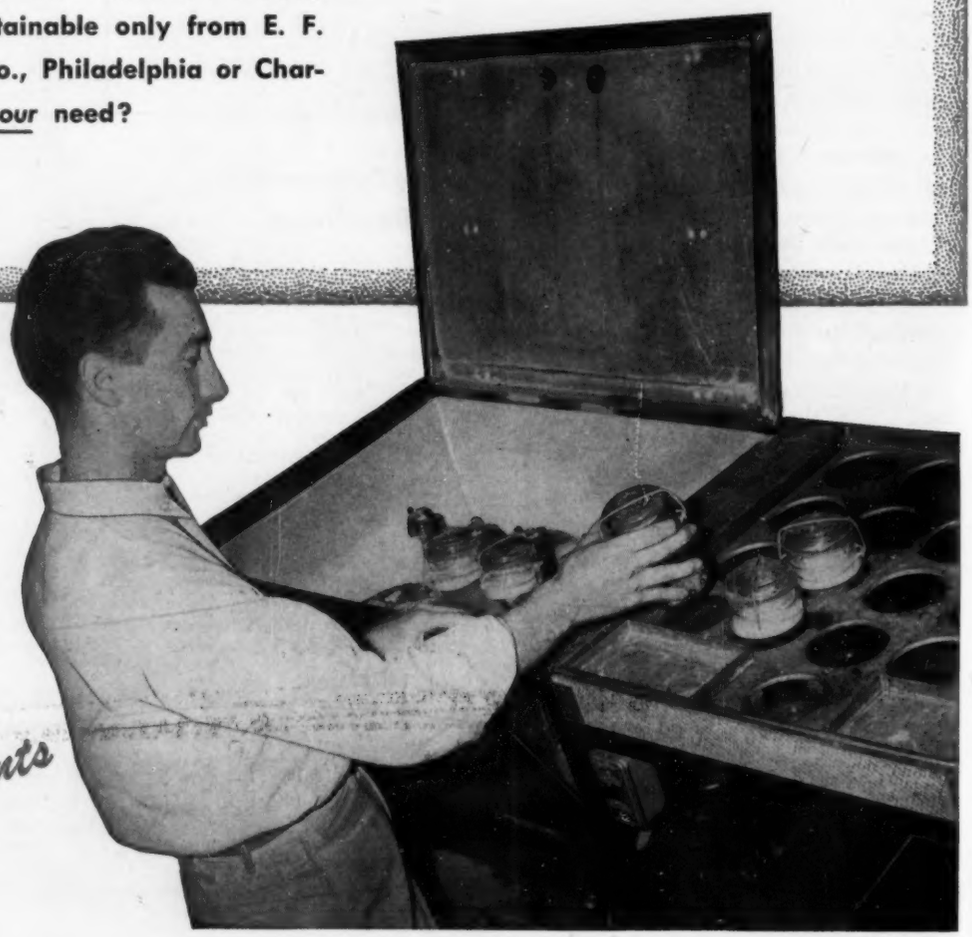
Nothing's left to guesswork in evaluating Houghton's CERFAK. This series of synthetic detergents, born some ten years ago in our laboratories, has been rigidly tested there and in the field, to determine definitely how efficient each type is, and for what jobs it should be used.

The Launderometer, shown below, washes a number of artificially soiled fabric samples simultaneously. Each jar contains a different detergent solution, and each washed sample is checked by Reflectometer for comparative cleanliness.

But that's only the beginning. The real test is in the mill. No type of CERFAK is recommended for a particular wet processing job until it has undergone actual production test and has been found O. K. for the application. Trained textile technicians conduct these trial runs under actual plant conditions.

Results prove that there is a type of CERFAK best suited to every cleaning need, offering an excellent money value, and obtainable only from E. F. Houghton & Co., Philadelphia or Charlotte. What's *your* need?



Houghton's Cerfak Detergents

came clogged with threads and had to be cleaned out once an hour while the shear was in use. Recently, a new attachment has been developed to overcome this difficulty. It is a separate unit in front of the shear, and it consists of two motor driven discs, one on each side of the goods. There are knives with knobs on the points to prevent the selvage from being damaged. The knives are directly driven from the motor. They revolve at 1800 rpm and can cut any loop down to ½". An automatic stop motion is provided to permit them to run backwards to allow a seam to pass through without being cut. The knives do not clog, and the goods can be run at a much higher rate of speed. This attachment is also used with Jacquard looms that make drapery and fancy goods for upholstering. This class of material has selvage loops which vary in length according to the pattern. These are cut open by the attachment; and the fabric is sheared in the same operation.

Tobacco Cloth

Tobacco cloth should be handled as little as possible. The only operation necessary is to re-roll it from the loom roll onto a large roll for shipment. The material is inspected during the rolling operation. Thin places are filled in and a seam is made. Oil spots cause trouble in the finishing process. They should be carefully watched for and washed or treated with a fluid that will dissolve the oil.

Some mills use a railway sewing and rolling machine which has enough draw between the circumference of the two rolling up drums to pack the goods tightly. The danger in this is that the goods might be frayed during the rolling operation. Another arrangement is to use a rolling head with racks and gearing to pack the goods.

The loom roll is held in cloth roll stands that can be moved from side to side so one edge of the cloth can be guided straight. The goods must be sewed under tension. The usual pins for holding the goods might pull through the selvage; for this reason, a clamp

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The Textile Industry . . .

has had the

Greatest Increase in LABOR COSTS

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utilized

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How well we are doing our job can be found by asking our Clients old and new.
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MILTON, PENNA.

is used to hold the pins. The cloth is put on the pins in the usual way, but before the tension is applied to the goods, a hand lever throws a clamp that holds the cloth on each side of the pins. In this way, much more tension can be put on the cloth without damaging the selvage.

On very thin goods, the seam is sewed once; the cloth is moved about ¾", and a second seam is made parallel with the first. Situated between the cloth roll stands and the sewing machine is a black board about 36" long over which the fabric passes to be inspected. The sewing machine has a reverse pulley which operates to pull the goods back where it is necessary to eliminate a thin place. The material is measured as it is rolled. About 10,000 yards can be put in one roll to be shipped.

One mill that was using a regular railway and rolling machine was making a roll of cloth 32" in diameter. This would make three rolls the width of a 96" truck body. By using a separate rolling head with racks and tension, they could put about seventeen hundred more yards in the same diameter roll. This made quite a difference in a truck load.

(To be continued)

Old-Timer

(Continued from page 155)

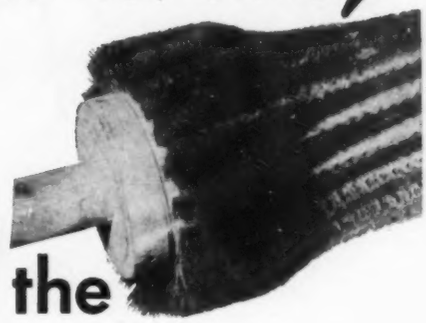
meant by saying he was overseer-weaving in No. 2 mill.

"Oh," he explained, "I am just overseer-weaving for one day. And the overseer-weaving from No. 2 is overseer in my card room for one day."

Well, I was certainly puzzled. I hardly knew whether our new superintendent was going "nuts" or not. Therefore, I took my time about mentioning it to him; a few days later he was in my office to discuss some orders we had for a style of goods we had not previously made and I told him how "flabbergasted" the phone girl was the other day when she sent for the overseer of No. 2 weaving and the overseer of No. 1 carding showed up.

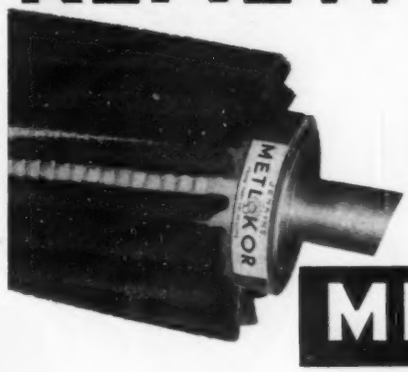
He smiled and gave me an answer something like this: "You

Don't throw it away



Just let us

RENEW the BRISTLE



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When the bristle on your "Metlkor" brush wears down, there's no need to buy a new brush. Return the old brush to us for rebristling.

Why pay for an entirely **new brush,** when you need only **new bristle?**

By our patented method worn bristle is stripped from the brush, the metal spindle or core is cleaned, and new bristle is put on the core.

The brush is as good as new

This sensible economy feature of "Metlkor" brushes appeals to woolen, cotton and rayon mills and textile printers. "Metlkors" are used by cotton and rayon weavers for brushing machines and shears, by woolen manufacturers for shears, presses, brushing machines, cards, etc., by printers for furnishing color and for blanket washing.

It will pay you, too, to use these economical brushes

← Write today for catalog showing the complete line of Jenkins brushes for the textile industry.

The Cores

of "Metlkor" brushes are made of cold-drawn steel or aluminum. They cannot sag or get out of alignment.

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Bristle

is put on "Metlkor" brushes by our patented process that makes them moisture proof, easy to keep clean, and good for long, efficient use.

JENKINS MAKES THE FOLLOWING BRUSHES:

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- Laying
- Shearing
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- Pressing
- Blanket Washing

etc.

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It's just "good old horse sense" to stock parts rather than lose valuable time, often days, waiting for replacements or repairs. If you're low on

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place your order at once. ALL Jenkins' products represent the highest quality materials and precision workmanship to help you keep maintenance costs at a minimum.

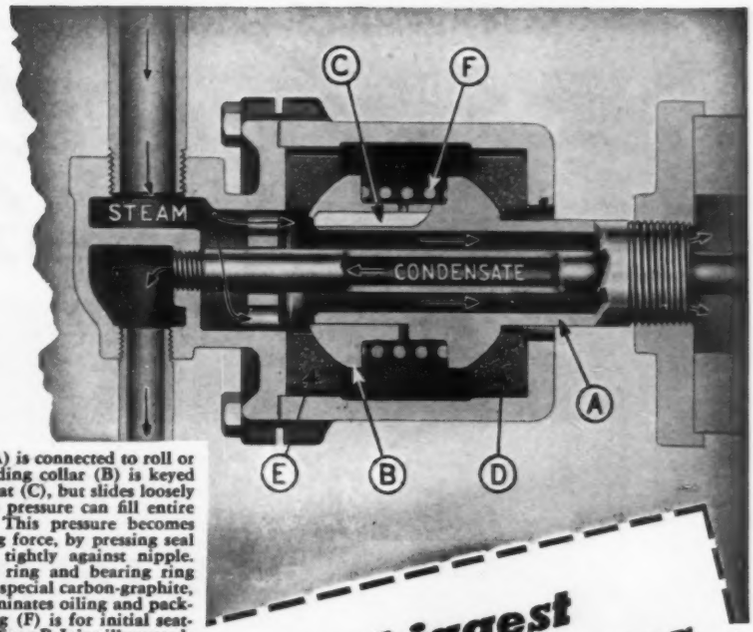
JENKINS METAL SHOP
GASTONIA, N. C.

know, Mr. President, that if you visit me at my home you are likely to see a picture on the wall which is probably ¼" out of level. I have seen this picture so much that I do not notice it being crooked any more, and by the same reasoning, if I go into a neighboring mill I am likely to see things which the local superintendent has got so used to that he no longer sees. I get many practical ideas by having our weaver be carder for a day, and the spinner be weaver for a day, then probably he will be carder or cloth room overseer for a day.

"But more important than having the overseers change departments at intervals to get the practical ideas they give me, is the fundamental fact which was brought out to me while reading of the success the great warrior Napoleon had and which he attributed to the selection of his captains and lieutenants more than any other one thing:

"For example, suppose it was practical and that we could pay the required salary for me to hire the best superintendent in the industry who came up as an overseer-spinning to run our spinning rooms, and the best superintendent we could find who had been a practical carder to run our card rooms; don't you think that would be about the strongest organization any mill could have? This is a rather far-fetched idea, I'll admit, but I have used it to emphasize the thought when I say my own personal success as a textile manufacturer and the success of the mills I am in charge of depends to a very large extent upon my ability to train my key men to run their jobs like *I* would run each one of those departments if *I* could be in all those departments at the same time. That is why I want our overseers-weaving to know as much about carding and spinning as I can possibly teach them; and the overseers-carding and spinning to know as much about weaving as I can possibly teach them.

"If my overseers know more about manufacturing as a whole—that is carding, spinning and weaving—than other mills' overseers know, then I should be able



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

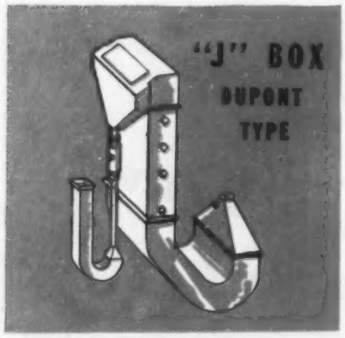
JOHNSON
Rotary Pressure
JOINTS

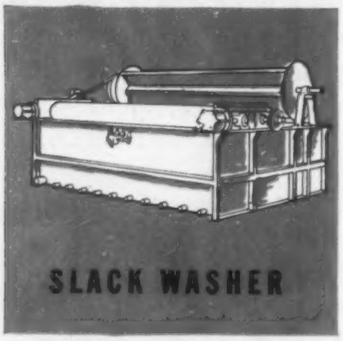
THE JOHNSON CORPORATION
815 WOOD STREET
THREE RIVERS, MICHIGAN

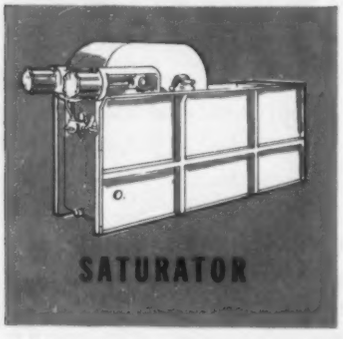
For Knit Goods—

STANDARDIZE ON

WIESNER-RAPP







CONTINUOUS BLEACHING RANGES

• Experience since the beginning of continuous bleaching ranges PLUS functionally designed, stainless steel machines combine to produce the following advantages with Wiesner-Rapp Knit Goods Bleaching Ranges:—

1. COMPACT, SHORT RANGE
2. LOW INITIAL COST...ONLY 3 MACHINES
3. SINGLE RUN
4. NO STRETCHING OF GOODS

ONLY 3 MACHINES NEEDED FOR WIESNER-RAPP KNIT GOODS RANGE

Our engineers have worked hand-in-hand with textile men and will welcome an opportunity to talk with you. The size and capacity of your plant are no limitations. Hear the exclusive Wiesner-Rapp story first hand from our engineers by calling them in today to tell you how you can be ahead...stay ahead with

THE WIESNER-RAPP CO., INC.

W-R

BUFFALO 11, NEW YORK

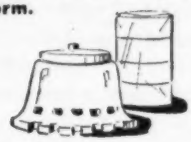
BE AHEAD ...STAY AHEAD WITH WIESNER-RAPP

*
pretty to look at

but they don't
MAKE FRIENDS

* Your premises may be modern . . . beautiful . . . and the last word in appearance, but if offensive odors come into the picture they just don't make friends for you. There's no excuse to let P. O. (Premise Odor) stifle your business . . . your relationship with people . . . not when P. O. is so simple to control with the proper Selig disinfectant or deodorant.

With PINETAX, offensive odors that arise from unsanitary conditions are overcome at their source by eliminating their cause . . . other odors are relieved and staleness overcome by the fresh pine odor when Pinetax is used in mopping water . . . also may be used as a deodorizing spray in diluted form.



Only Selig offers you the patented features to be found in the URANETTE method of deodorizing your toilet rooms. The Uranette deodorant holder prevents clogging of drains, has no metal parts to corrode or rust and is pilfer-proof . . . protecting against the removal of Uranette blocks until their deodorizing vapors are completely used.

Ask for a Selig maintenance specialist to help you plan your sanitation program . . . there's a Selig product designed for better sanitation wherever it may be.

The SELIG COMPANY
Manufacturing Chemist since 1896
GENERAL OFFICES and FACTORY
ATLANTA • GEORGIA

OFFICES & WAREHOUSES • NEW ORLEANS • DALLAS

to do a better job for you than any other superintendent you can hire."

Lunch time: Thank you again, Mr. President. OLD-TIMER feels confident that your giving an outline of this young superintendent's methods will be the means of helping many overseers and superintendents in their work.

Rayon Yarn Dyeing

(*Continued from page* 121)

all at 190°F. Sample. Additions are run for three minutes. All the precautions about the amount of salt needed must be observed and the addition of dye to produce the shade must be carefully considered as some dyes may become uneven in such a salt bath.

It is not only economical to exhaust the bath as far as possible but also to prevent uneven skeins which might result when unexhausted dye liquors run to the bottom of the skein. This might occur while waiting for the skeins to be unloaded, extracted, etc. It is wise to give such shades a salt rinse before removing. This is also helpful with colors that are likely to migrate during drying.

Package Dyeing Quicker

The increasing use of the package method of dyeing has been noted. The winding after dyeing, as compared with that of skeins, is quicker, with fewer knots, resulting in higher production during the subsequent weaving or knitting operations.

The special difficulties caused by a low liquor ratio makes dye selection and salt control even more necessary, especially for combinations. The dyeing may be started at 200°F. with the liquor cycle starting at 2 out, 4 inside, again 2-4, then 4 out and 8 in throughout the remainder of the dyeing. Direct and developed colors are being dyed on 150/40 and 100/40 while dyeings on other rayons from 50 deniers up are possible.

Compensate for Swelling

The importance of uniform winding of rayon is even greater than that for cotton yarns, because channeling must be avoided. Hard

CLEAN FLOORS
in 1 the Time
with 2 the Labor

The LAWLOR 20-D
is 2 Machines in 1
• Scrubs Floors Evenly
• Removes Dirty Water

One operator works the easy controls. Clean water is fed from one tank upon the soaped floor which is then scrubbed with a 19" diameter revolving brush. Behind it a rubber squeegee mops up the dirty water which is vacuum pumped into a second tank.

The Lawlor 20-D is just the machine for large floor areas. Only 22" wide, it can be used in congested places, around machines, counters and desks. Available for either AC or DC current.

Write for new catalog giving description of the Lawlor 20-D and complete line.

MOP WRINGERS
All steel with perforated rolls. Easy foot-lever operation. Made for one or two pails.

MOPPING TANKS
Heavy galvanized steel with welded seams. Two compartments, each with shut-off. Foot pressure wringers. 30 or 60-gallon capacity.

SCRUBBERS and POLISHERS
12 different styles, a right size for every need. Your choice of Tampico, Palmetto or Steel Wire brushes.

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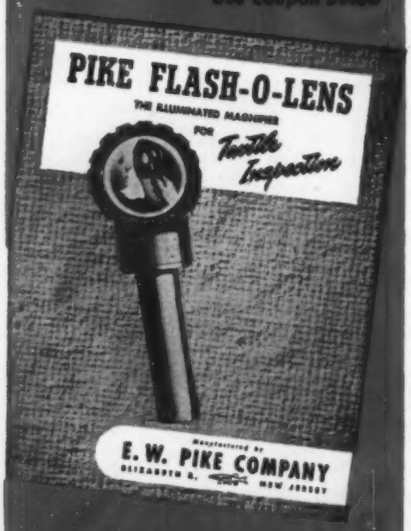

USED THROUGHOUT THE TEXTILE INDUSTRY FOR:

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- laying out textile patterns
- matching colors
- testing stitch length and width on knitted fabrics
- all types of textile inspection

Portable Battery and Electric Models Available with 5, 7, 20, or 40 Power Lenses.

Detachable Textile Counting Plate for use with 5 power models quickly gives 1", ½", ¼", and ⅛" measurements.

5 Power Battery Model with textile plate $10.35

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packages are very difficult to penetrate and the winding must be much softer than for cotton because rayon swells more when wet and a normally wound package would not allow the liquor to flow through. Pumps should deliver a greater liquor flow and a 4-6 gallons per minute rate is not too much.

Modified Package Dyeing

A modification of this package dyeing is the dyeing of viscose in the cake form as it comes from the Topham centrifuge box. When the manufacturer of rayon and the dyeing processors have a compatible arrangement, the savings are considerable, but from a commission viewpoint, the variation in size and shape of the cakes may make the overall cost of no advantage.

One large English firm began experimenting with cake dyeing ten years ago and dyed 1,500,000 lbs. with such good results that they have given up dyeing in skein form entirely. The cakes come in 16-20-ounce size, though larger units are being tried. They are dyed on standard holders using a dual flow system.

Continued Next Issue

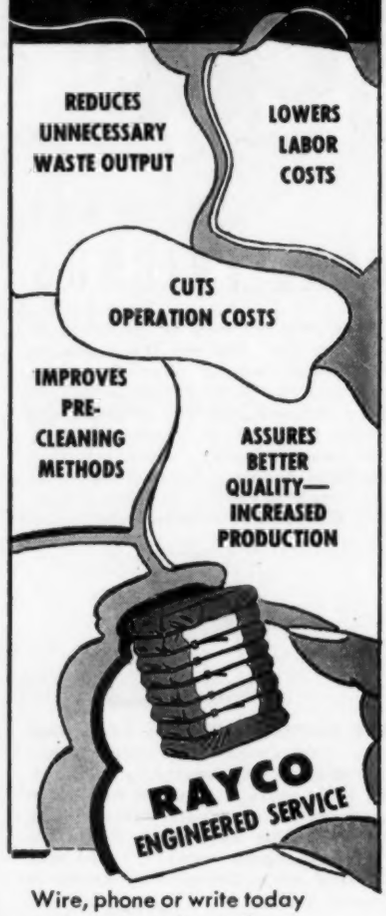
NEW PUBLICATIONS OF TEXTILE INTEREST

Dings Magnetic Separator Co., 4740 W. McGeogh Ave., Milwaukee 14, Wis. Catalog No. 99 which describes this company's high intensity, vertical plate electromagnets and magnetic pulleys.

The Yale & Towne Mfg. Co., 4530 Tacony Street, Philadelphia 24, Pa. Bulletins on the new trucks now available from this company, giving complete engineering specifications, capacity charts, and illustrations. The 1000-lb. truck is cataloged in Bulletin 2308, the 1500-lb. truck in Bulletin 2316, and 2000-lb. truck in Bulletin 2309. Also, Bulletin P809 describing this company's line of Worksaver electric trucks.

Southern Sizing Company, P. O. Box 167, Atlanta 1, Ga. "Developments in Warp Sizing," a technical

RAYCO
Engineered Service Solves Your Waste Problems



Wire, phone or write today and arrange for a Rayco Waste Survey in your mill. Our fiber specialists are always at your service.

The RAILWAY SUPPLY & MFG. CO. and Affiliates

Specialists in Grading, Marketing and Processing Cotton and Synthetic Fibers

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RAYCO for COTTON AND SYNTHETIC FIBERS

bulletin describing recent research work on warp sizing, use of separate application of warp lubricant, and containing results of weaving tests when using a newly developed product.

Raybestos-Manhattan, Inc., Passaic, N. J. Sixth edition of "Manhattan Rubber Products for Industry," a condensed catalog of mechanical rubber goods. Particular emphasis is given transmission and conveyor belting, V-belts, hose, engineered molded products, rubber roll coverings, tank linings, and abrasive wheels.

Oscar Kohorn & Co., Ltd., 501 Fifth Avenue, New York 17, N. Y. Brochure entitled "The Outlook for Rayon," which is a study of trends in the rayon industry with special emphasis on future demand, and on the possibilities for early relief from current shortages.

Sharples Chemicals, Inc., 123 South Broad Street, Philadelphia 9, Pa. Booklet 47-6 entitled "Sharples Synthetic Organic Chemicals." This publication is designed to bring up-to-date information that will assist users in selecting chemicals for application in existing processes or in the development of new ones.

American Cyanamid Co., Calco Chemical Div., Bound Brook, N. J. Calco Technical Bulletin No. 801, "Determination of the Solubility of Dyes," in which is described the method which can be used to obtain the solubility of commercial dyes.

Armour and Company, 1355 West 31st St., Chicago, Ill. Booklet in the series of Armour technical reference aids for the chemical processing industries entitled "The Selection and Use of Fatty Acids."

Emmott & Co., Ltd., 31 King St. West, Manchester, England. 100-page book entitled "Costing in the Wool Textile and Other Industries," by D. R. H. Williams. A detailed description of a costing system is provided.

PERSONAL NOTES

ABOUT MEN YOU KNOW

HAROLD LEWIS, formerly with Burlington Mills Corp. in Statesville, N. C., has been made superintendent of Empire Knitting Mills of the same city. He succeeds ARTHUR RODIQUEZ who has become connected with a textile business in Lima, Peru.

Directors of J. L. Stifel & Sons, Inc., Wheeling, West Va., have announced the election of WARREN L. CHAFFIN, former executive vice-president, as president of the textile concern. He succeeds ARTHUR C. STIFEL, SR., who has been named chairman of the board.

PAUL MARTIN PLATZMAN, formerly associated with Alexander Smith and Sons Carpet Co., Yonkers, N. Y., has received the appointment as technical director of Quitman (Ga.) Mills, Inc.

ARTHUR C. YOUNG, JR., former assistant director of standards with the Bibb Mfg. Co., Macon, Ga., has now become manager of standards for the Newberry (S. C.) Textile Mills.

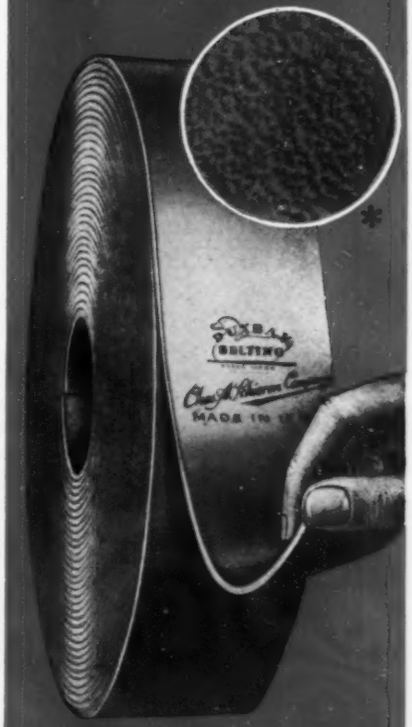
The Clarence S. Brown & Co., Inc., New York, N. Y., has announced the resignation of CLARENCE S. BROWN as president and treasurer. He is succeeded by ROBERT B. LOW. KENNETH P. BROWN, son of the founder, has become secretary and treasurer and HAROLD E. H. KNIGHT was elected a vice-president.

Erwin Cotton Mills Co., Durham, N. C., has announced the following elections: K. P. LEWIS, chairman of the board, succeeding W. A. ERWIN, deceased; WILLIAM H. RUFFIN, former vice-president and treasurer, succeeds Mr. Lewis as president; CARL R. HARRIS, vice-president and assistant treasurer; FRANK T. de VYVER, vice-president; E. W. DUNHAM, secretary; N. A. GREGORY, assistant secretary, and L. C. THOMAS, assistant secretary. Also, EDWIN M. HOLT has become general manager of manufacturing and will assist Mr. Harris.

JOHN C. BORDEN, previously vice-president and treasurer, has been elected president of Borden Mills, Inc., Kingsport, Tenn., succeeding BERTRAM H. BORDEN, who

Here's one way to judge leather belting quality

Examine the working side of the belt to see that it has a clean, uniform, open grain surface like this:



*Microphoto of Schieren DUXBAK belting.

If it does, you can be sure the belting has the *pulley-gripping* capacity to provide maximum producing speed and power.

With Schieren DUXBAK leather belting the surface which provide this glove-like "grip" is achieved by an exclusive scouring process that assures maximum coefficient of friction. Low stretch, extra flexibility and longer service life are some of the other money saving advantages of DUXBAK belting.

Write for further information on leather belting, packings or leather specialties of all types.

CHAS. A. SCHIEREN COMPANY
36 FERRY STREET, NEW YORK 7, N. Y.
60 Front Street, W., Toronto, Ont.

Branch Offices in Chicago, Dallas, Denver, Detroit, Newark, New York, Philadelphia, Pittsburgh, Salt Lake City

has become chairman of the board. HOWARD S. BORDEN was elected first vice-president; ARTHUR B. BORDEN, vice-president and treasurer, and WILLIAM J. STILL, vice-president in charge of manufacturing.

J. ROBERT BONNAR, technical director of General Dyestuff Corporation, has been elected chairman of the research committee of the American Association of Textile Chemists and Colorists. He was also re-elected chairman of the executive committee on research.

A. L. BROWN, vice-president and general manager of Cannon Mills Co., Kannapolis, N. C., has been elected president of China Grove (N. C.) Cotton Mills Co. He succeeds the late A. C. LINEBERGER, SR.

R. T. LEGRAND, JR., has been elevated to treasurer of the Shelby (N. C.) Cotton Mills. R. T. LEGRAND, SR., was reelected president and GEORGE BLANTON, SR., vice-president.

WILLIAM MYERS, JR., has submitted his resignation as vice-president and general manager of United States Finishing Co. and its subsidiary, Queen Dyeing Co. JARED J. MOWRY, vice-president of U. S. Finishing Co., and executive vice-president and general manager of Hartsville Print & Dye Works, a South Carolina subsidiary, has been made general manager of U. S. Finishing and vice-president and general manager of Queen.

WILBERT WOOD, president of Industrial Cotton Mills, Rock Hill, S. C., has been elected general manager of the Aragon plant of Aragon Baldwin Mills succeeding GEORGE P. McCLENAGHAN. Mr. Wood's duties as general manager of the Aragon plant will in no way conflict or merge with the operation of the two units. Mr. McClenaghan remains as general manager of the Whitmire, S. C., plant of Aragon Baldwin.

WILLIAM A. KARL, former vice-president, has been promoted to president of Firestone Textiles, Akron, Ohio. Mr. Karl is in charge of all textile operations of The Firestone Tire and Rubber Co., and its textile plants at New Bedford, Mass.; Gastonia, N. C., and Bennettsville, S. C.

WALTER G. REGNERY, former assistant manager, has been elevated to general manager of Joanna Cotton Mills Co., Goldville, S. C., succeeding the late WILLIAM A. MOORHEAD.

T. G. ROCHE, former vice-president and manager of Raycord, Inc., Spartanburg, S. C., has been named plant manager of the Limestone and Hamrick Mills, Gaffney, S. C.

Obituaries

ARTHUR M. REIS, president of Robert Reis & Company, knit underwear manufacturers, died unexpectedly last December 23 at the age of 64.

HENRY JANSSEN, 81, co-founder of the Wyomissing Industries, died at his home in Wyomissing, Pa., January 28, following less than a two-week illness.

GEORGE B. MOORE, 42, former superintendent of Whitney Mfg. Co., Spartanburg, S. C., passed away recently in a Philadelphia hospital after an extended illness.

MOSES TYLER STEVENS, vice-president of M. T. Stevens & Sons, Inc., died suddenly at his residence in Boston, Mass. He was 76 years old.

*Series 1 of Typical "*H-W" Conditioner Applications*

CHIPMAN SPINNING MILLS *REPORTS:*

"H-W" CONDITIONER increases production over other types of equipment because the automatic controls reduce rejection of material by eliminating improper timing of conditioning treatment. The "H-W" CONDITIONER gives a more uniform product because each cylinder or spindle is reached, whereas in other types of equipment "blind spots" sometime cause improper curing of some of the material. Also saves labor as operator is able to do other work without watching the clock . . . the automatic controls of the "H-W" CONDITIONER do the clock watching". Mr. Michael F. Kopec, plant superintendent, reports: "We are very well pleased with the 'H-W' CONDITIONER."

View of "H-W" CONDITIONER installed in Chipman Spinning Mills, Easton, Pa.

•

Full particulars in Bulletin UC-3 . . . yours for the asking.

*Trade-Mark Reg.

The Industrial Dryer Corporation
STAMFORD, CONN.

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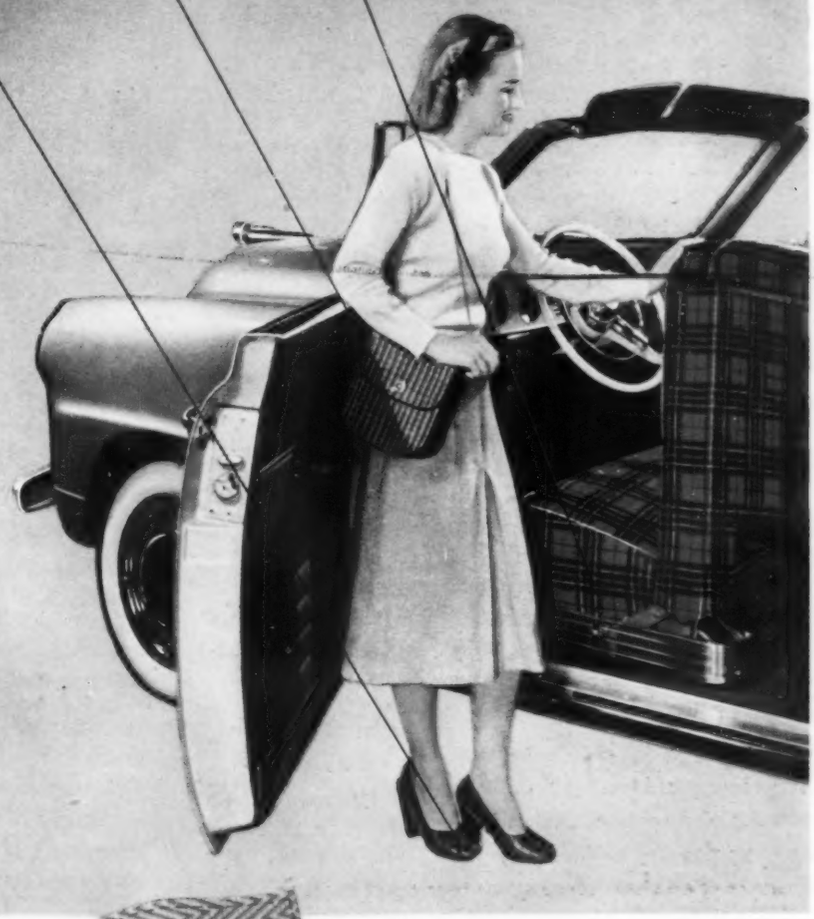

Made For Wear . . . Styled For Sales. Wherever fabric beauty must be practical, *Saran* is the answer. Here, in the newest seat covers, are color and beauty that will withstand rain, sun and rugged usage. Saran won't snag, sag or scuff and this amazing fabric permits the easy removal of surface dirt and dust. That's why Saran is the first choice in seat covers for motorists everywhere. ✣ Think of the markets Saran can open for you! Its long-lived beauty makes it a favorite for fine furniture . . . and its great wearability is a natural in seatings for restaurants, theaters and waiting rooms. Put this career fabric to work for you in these profitable markets. Join the swing to Saran . . . build your opportunity on this modern textile material by writing National for further information.

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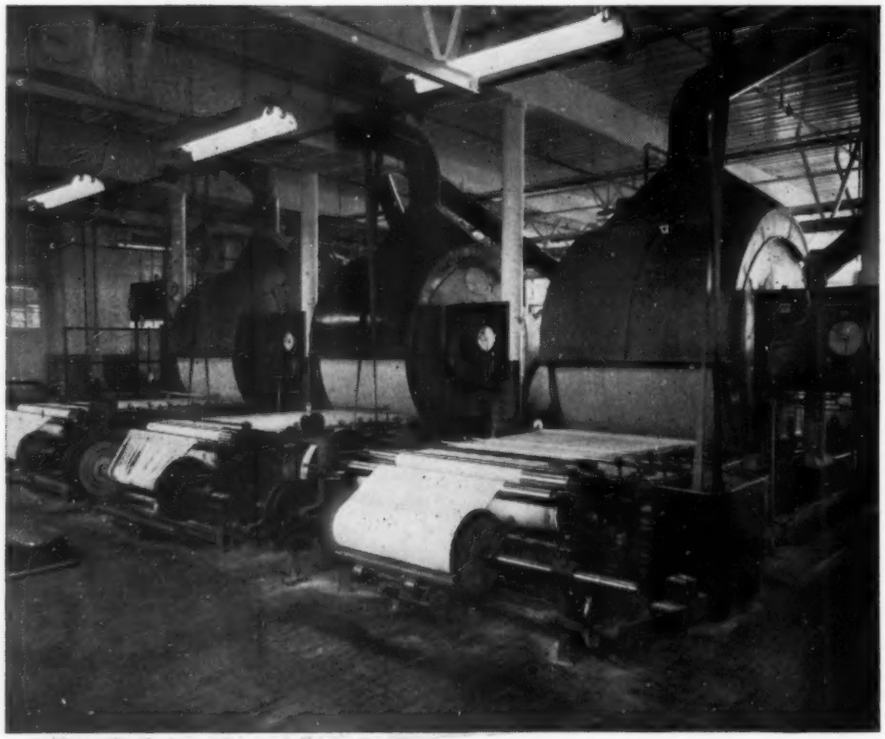
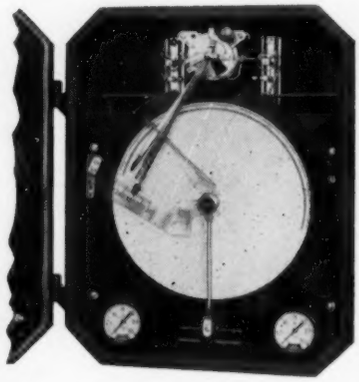
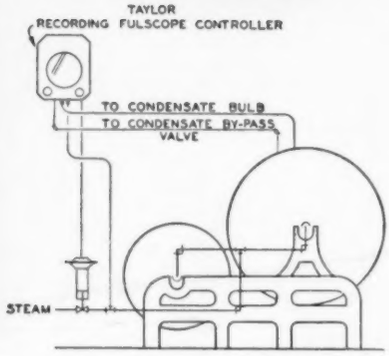
SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's Saran, and supplied to mills, weavers and other fabricators.*

THE NEW LOOK at Utica and Mohawk Cotton Mills







17 years ago the Utica and Mohawk Cotton Mills, Utica, N. Y., installed complete Taylor Control Instruments on their slashers, size cooking kettles, and storage kettles. We believe the best proof of their accurate, dependable service is that Utica and Mohawk just came back to us for new instrumentation as a part of their extensive modernization program. They have already installed new Taylor Controls (see the 3 panels above) to maintain correct size box level and temperatures and drying cylinder temperatures. These standard Taylor Control Systems are giving them:

Uniform deposit of size.
Proper setting of the size on the warp.
Correct laying and binding in of the warp fibres.
Retention of the proper moisture in the warp.
Decreased shedding of dried size.
Assurance of no steam consumption over actual requirements.

The result is stronger, more elastic warps insuring less breakage, fewer loom stoppages and increased production at lower cost.

The latest instrumentation refinement is the new cylinder control system shown at the right. A Fulscope Double Duty Controller which controls (1) temperature of the condensate and (2) pressure on the slasher cylinders. Only one control point adjustment is needed when switching from one weight yarn to another. At no sacrifice to slasher production, this control system maintains consistently ideal conditions in the cylinders. And its precision control permits the maintaining of cylinder pressures at the most efficient value without wasting steam in blow-offs and through pop-valves.

Whether your problems involve a new building program or modernization, Taylor is ready to supply you with any or all of the following time-proven control systems: *size cooking; size storage; size box level and temperature;* and *cylinder temperature and pressure control.* May we hear from you? Ask your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

WHAT THE TEXTILE MILLS ARE DOING

Dover Yarn Mill, Inc., has been organized with a capital of $200,000 by Jack and Charles Dover. They have purchased the Buffalo Mills, Shelby, N. C., which have been idle for a number of months, and comprise several buildings. The new owners will make improvements and resume operations for yarn and rayon spinning.

Arglen Textile Printers, Inc., has been organized with a capital of 200 shares of stock, no par value, to operate a dye and print works in Providence, R. I.

Acabados, Mexico, S. A., a new concern, is in the process of erecting a large textile finishing plant near Mexico City, which will be complete with dyeing, bleaching and finishing equipment for cotton and rayon goods.

Easley (S. C.) Cotton Mills have been entirely taken over by Woodside Cotton Mills, Inc., Greenville, S. C. Woodside officers now head the acquired concern.

Southern Mills, Inc., Atlanta, Ga., cotton goods, has asked for bids for a one-story addition to the mill.

Reeves Brothers, Inc., New York, N. Y., operating Eagle & Phenix Mills, Columbus, Ga., plans expansion and improvements in the plant. Additional equipment has been installed, and the cost is reported to be in excess of $300,000.

Lowell Bleachery South (Dundee Mills), Griffin, Ga., will transfer its dye plant at East Griffin to a new building now under construction at Experiment, Ga. The change will represent an estimated cost of about $300,000, including equipment.

The recently organized Gilbertville (Mass.) Woven Label Corp. has begun operations. Edwin Gage will head the concern.

Geering Textile Print, Inc., Paterson, N. J., operating a print works for ribbons, etc., has leased space in a former aircraft plant of Wright Aeronautical Corp., Fair Lawn, N. J., and will equip and occupy for expansion.

Bigelow - Sanford Carpet Co., Thompsonville, Conn., has negotiations under way for the purchase of federal-owned property at Johnson City, N. Y., comprising a former aircraft propeller plant. It will be improved and equipped for a new branch mill, specializing in certain types of rugs and wool-faced carpets.

Waumbec Dyeing & Finishing Co., Inc., New York, N. Y., has been chartered with a capital of 5000 shares of stock, no par value, to operate a dyeing and finishing mill.

Efird Mfg. Co., Inc., Albemarle, N. C., cotton yarns, has plans under way for a one-story addition, to be used as an opening room.

Linwood Processors, Inc., recently organized, has plans for the operation of a yarn-processing mill in High Point, N. C. Ernest L. Caswell and Rufus F. Laws, both of High Point, will head the new concern.

F. P. Bacon, who owns the Blue Ridge Weavers, Tryon, N. C., rugs, etc., has purchased the mill and business of Home Weavers, operated by B. G. Foster, and will consolidate production of both plants.

Garr's Fabrics, Inc., has been chartered with a capital of $50,000, to operate a mill in the vicinity of Providence, R. I., for the manufacture of rayon fabrics. Arthur H. Feiner, Providence, is the principal incorporator and representative.

Providence (R. I.) Wool Combing Co. has let general contract for a four-story addition to cost over $40,000, exclusive of equipment.

Hayes Lace Works, West Warwick, R. I., has let contract for three one-story additions, reported to cost about $75,000, with equipment.

Limestone Mills, Gaffney, S. C., recently acquired by M. Lowenstein & Sons, Inc., New York, have begun installation of about 100 new looms and auxiliary equipment; new drawabout $75,000, with equipment.

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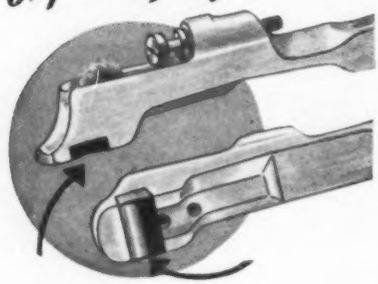

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ing frames will be placed in the carding department.

Palmetto Yarn Mills, Inc., has completed conversion of the mill in Pageland, S. C., from cotton yarns to the manufacture of spun rayon yarns from 14s to 30s.

Barel Mills, Inc., has been incorporated to operate a mill in the vicinity of Martinsburg, W. Va., for the manufacture of rayon and cotton specialties. Lacy I. Rice, Martinsburg, is one of the incorporators.

Appleton (Wis.) Woolen Mills, Inc., paper maker's felts, etc., has plans maturing for a one-story addition, to be used for expansion in the weaving department.

J. P. Stevens & Co., Inc., New York, has arranged for the lease of a former government ordnance plant at Milledgeville, Ga., and will take over at an early date. The property will be improved and equipped for a new branch mill for the manufacture of woolen and worsted fabrics. Machinery and facilities will be provided for a large capacity. This company is also reported planning a new textile finishing mill in the vicinity of Kollocks, S. C., comprising several large units. The cost of this unit is said to be in excess of $10,000,000.

Gay Mfg. Co., Boston, Mass., recently chartered with a capital of 1000 shares of stock, no par value, has plans for the operation of a mill for the manufacture of cotton and rayon products. M. Melvin Sirota is president of the concern.

Norad Spinning Corp., North Adams, Mass., has been incorporated with a capital of 1000 shares of stock, no par value, to manufacture cotton goods. Harry Melcher is president and treasurer.

Airedale Worsted Mills, Inc., Woonsocket, R. I., has arranged for the purchase of Damar Wool Combing Co., Olneyville, R. I., and will take over at once. The new owner, a subsidiary of the Axelrod group of mills, is said to be planning a continuance of operations without change.

NEWS in BRIEF

STA Annual Outing May 13-15. The Southern Textile Association will hold its annual convention May 13-15 at the Ocean Forest Hotel, Myrtle Beach, S. C. Virgil E. McDowell of Rosemary Mfg. Co. is president. The annual associate members' banquet will be on Thursday evening. Reservations for hotel space should be made direct to the Ocean Forest

National Textile Seminar. The third annual meeting of the National Textile Seminar will be at Shawnee Inn, Shawnee-on-Delaware, Pa., May 10-14. Shawnee-on-Delaware, the scene of the last Seminar, is near East Stroudsburg, Pa. Topics for this year's Seminar are taxes, export markets, labor relations, and new developments as a result of research.

Industrial Trainers Association. The Carolina Industrial Trainers Association has been formed for the improvement of training and training methods in industry. Originally the association was composed of men in the textile industry, and was so named, but due to interest of other types of industrial training men, the association was broadened. Meetings are held quarterly. S. C. Thomas, Graniteville, S. C., is secretary-treasurer.

Annual AATCC Meet in Augusta. Plans are now being made for the 27th annual convention of the American Association of Textile Chemists and Colorists. The meeting will be held in Augusta, Ga., October 21-23. The tentative program includes three technical sessions, the intersectional prize paper contest, general research committee meeting, and presentation of the Olney Award. Organization of a Western New England Section of AATCC has been authorized.

"Saran" Now Generic Term. Dow Chemical Company has for-

mally released its trademark rights to the name "saran," thereby permitting it to become the descriptive name of the product. The term "saran" applies to a series of thermoplastic resins chemically known as vinylidene chloride copolymers.

Czech Textile Machinery. Brno Zbrojovka has commenced the manufacture of textile machinery in Czechoslovakia. Three hundred looms have been produced and a prototype carding machine has been built. Mule spinning will also be made.

Botanized Shirt. A washable shirt of a virgin wool tropical worsted is being produced by Botany Mills, Inc., under the trade name of "Botanized." An exclusive process is being used.

Wool Research Proposed. F. Eugene Ackerman of the American Wool Council has proposed a long range program of fundamental research to increase the usage values of available types and qualities of wool. The program would also embrace increased public education and the stimulation of public interest in the values of wool apparel.

Wool Testing Machines Urged. Wool research undertaken in the Research and Marketing Act program for 1948 met with favorable reception by the Wool Advisory Committee at its second meeting in Washington during February. It was recommended that machines be developed to demonstrate and test the ultimate spinning qualities of single fleeces of wool. A device of this kind, operated under standardized controlled conditions, would be useful in providing measurements that would help solve biological problems, it was said.

National Cotton Week May 17-22. The theme of National Cotton Week, May 17-22, will be "Cotton —America's Favorite Fabric." As in the past, there will be a number of retail promotions, special events, and cotton carnivals. Matilda Nail of Fort Worth, Texas, was recently chosen as the 1948 Maid of Cotton. Miss Nail, a 19-year old blonde with a pleasing personality, will visit key points in this country, later traveling to England and France.

A visit to the New York Cotton Exchange began the official tour of Miss Matilda Nail, 1948 Maid of Cotton. Miss Nail was welcomed by Gustave I. Tolson (left), president of the Exchange.

Director Ching Speaks. Cyrus S. Ching, director of the Federal Mediation and Conciliation Service, has emphasized that this branch of the service has no power, and he would not have accepted the job if it carried directive power. Mr. Ching, who has behind him an enviable record in industrial relations work, prefers that his department get credit, if there is any credit given, for industrial peace instead of settling industrial wars. Under Ching, the service is for neither management nor labor, but has adopted a middle of the road policy, which, as Mr. Ching explained, will at times not be to the liking of either side. Most of the work of the Mediation and Conciliation Service will be before and not after industrial unrest, he said.

Wool-Nylon Fabric. A new fabric made from woolen or worsted yarns with a core of nylon thread is being produced. Weighing from 1½ to 7 oz. per sq. yd., this new fabric is claimed to be four times as strong as any wool fabric of similar weight. It is made from a blend of 95% wool and 5% nylon. The fabric is said to have both the handle and appearance of all-wool cloth, and it can be dyed, printed and processed in the normal man-

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ner. Contemplated uses for the product are for the manufacture of such items as uniforms, men's tropical shirts, suitings, etc.

Audio-Visual Materials Consultation Bureau. A bureau has been established at Wayne University in Detroit, Michigan, for the purpose of assisting commercial and industrial firms in the production of all types of instructional material for school use. Surveys showing school needs, critical analysis of scripts and copy, and actual classroom try-out of materials in "rough" or finished form are types of help available. Also, the bureau is equipped to assist in the development of films, film strips, records, manuals, etc., to be used for instructional purposes in industrial training programs.

Electrification Problems Discussion. Electric equipment for looms and slashers will be the subject of technical papers to be presented during the North Eastern District Meeting of the American Institute of Electrical Engineers at New Haven, April 28-30, 1948. The session is being sponsored by the Subcommittee on the Textile Industry of the General Industry Applications Committee.

The program will consist of:

1. "Selection of Electric Drives for Looms" by R. J. Demartini and A. F. Lukens, of the General Electric Company.
2. "Trends in Loom Design and Their Effect on Drive Requirements" by Victor Sepavich, Crompton & Knowles Loom Works.
3. "Minimizing Fire Hazards of Electrical Equipment on Looms" by C. F. Hedlund, Associated Factory Mutual.
4. "Slasher Drives" by C. E. Center, Westinghouse Electric Corp.
5. "Drive Requirements for Cotton and Rayon Slashers" by Frank Rowe, Dan River Mills.
6. "Drive Requirements for Worsted Slashers" by Paul Wentzel, Uxbridge Worsted Company.

Textile engineers are cordially invited to attend and take part in the discussion. For additional information, write C. C. Wilson, AIEE Headquarters, 33 West 39th Street, New York 18, N. Y.

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SUPPLIERS' NEWS

WHAT THEY ARE DOING

Cameron Mackenzie, who joined Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J.,

as a student trainee, has been made a sales representative in the New York Metropolitan district.

General Engineering and Research Corp., Charlotte, N. C., has recently been organized to supply manufacturers and textile plants in their vicinity with mechanical design engineering. The company, it is reported, is in a position to design and develop new products or special machinery. Harry Frohman is president of the concern; V. A. Hanson, vice-president; S. T. Taylor, secretary-treasurer, and J. B. Goodgame, vice-president and chief engineer.

Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., has announced the appointment of two new and exclusive agents in Palestine and Uruguay. Miron Fainbrun will handle the company's line of circular knitting machines in Palestine, and J. A. Nougreres will handle the same line in Uruguay.

The Aralac plant of the National Dairy Products Corp., at Taftville, Conn., has been sold to the Virginia-Carolina Chemical Corporation of Richmond, Va. National Dairy plans to discontinue operations in the casein fiber field. The Virginia-Carolina company reports it has found the Taftville plant suited to its plan to produce fibers from vegetable protein, which is in adequate supply from domestic agricultural sources, rather than from casein.

American Key Products, Inc., New York City, has been appointed distributor for products manufactured at the recently completed potato starch plant, owned by the Idaho Potato Growers, Inc., Idaho Falls, Idaho.

Bjarne Klaussen, a member of the board of directors and former works manager of the Niagara plant, has been promoted to vice-president in charge of production of the Hooker Electrochemical Co., Niagara Falls, N. Y.

The Tennessee Eastman Corp., producer of cellulose acetate textile fibers, has announced that it has discontinued use of the word "rayon" as a generic name for its fibers and the products made from them.

J. J. Howe, former supervisor of technical sales and development for the Heyden Chemical Corp., Garfield,

N. J., has joined the technical sales staff of the chemicals department of The Quaker Oats Co., Chicago.

Hollister-Moreland Company has made effective the change in name to Hollister-Moreland Company, Inc.

F. D. Weatherholt, former eastern resale manager, has been assigned the position of assistant industrial sales manager of Westinghouse Electric Corp., with headquarters at East Pittsburgh, Pa.

The American Viscose Corp. has announced the addition of John Reid to the sales staff of the rayon sales division in New York. Mr. Reid formerly was connected with the export sales division.

Fidelity Machine Company, Inc., Philadelphia, Pa., has appointed the Southern Mill Equipment Corp., Charlotte, N. C., as their sales agency for the states of North and South Carolina, Virginia, West Virginia and Maryland.

Solvay Sales Division, Allied Chemical & Dye Corp., New York, has announced the following changes

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in its branch office organization: Woodward Allen, former manager of the Boston office, succeeds the late Harral O. Pierce, as manager of the Charlotte, N. C., office. M. S. Johnson, former assistant manager, succeeds Mr. Allen as manager in Boston. H. W. Causey has been named assistant manager in Charlotte, and M. F. Kennedy, assistant manager at Pittsburgh. Both have served as salesmen in their respective territories. H. R. Stoothoff, former sales representative, is now assistant manager at Chicago. W. H. Floyd, also sales representative before, has become assistant manager at the Cincinnati branch.

Mason-Neilan Regulator Company has announced the transfer of E. Putnam Head from manager of the Buffalo office to that of the Atlanta office.

Dr. Burt Johnson, former head of the biology division of the Institute of Textile Technology, Charlottesville, Va., has joined the staff of the National Cotton Council as cotton technologist, and will make his headquarters in Memphis, Tenn. In his new position, Dr. Johnson will be concerned with the broad field of fiber qualities in relation to mill needs, breeding, ginning, and movement into the hands of the spinner.

John P. Edwards, formerly associated with the process study group of the Hooker Electrochemical Co., Niagara Falls, N. Y., has been promoted to the sales development department. He will handle technical correspondence with respect to the use and application of Hooker chemicals by all customers.

The transfer of Industrial Rayon Corporation's executive headquarters, general office staff, purchasing, production and engineering personnel to the Union Commerce Building in Cleveland, Ohio, has been announced. The treasury and accounting departments began the move in 1945, and this completes the transfer.

The Southern States Equipment Corp., Hampton, Ga., has announced the appointment of the Matthews Equipment Co., Providence, R. I., as its eastern sales agency. The Matthews company will represent the concern in the New England states as well as in New York, New Jersey, Pennsylvania, Ohio and Maryland.

Crawford H. Greenewalt, former vice-chairman of the executive committee and a member of the finance committee, has become president of E. I. du Pont de Nemours & Co., Wilmington, Del. He succeeds Walter S. Carpenter, Jr., who was elected chairman of the board following the retirement of Lammot du Pont. Mr. Greenewalt also has been promoted to chairman of the executive committee.

The appointment of M. H. Courtenay as assistant district manager of the Atlanta, Ga., office of SKF Industries, Inc., has been announced.

Carbomatic Corp., Long Island City, N. Y., has chosen Textile Specialties Co., Greensboro, N. C., as representatives to handle the sales and servicing of the company's products throughout North Carolina, South Carolina, Virginia, Georgia and Alabama.

The Whitney Chain & Mfg. Co. and The Hanson-Whitney Machine Co., both of Hartford, Conn., have been consolidated into Whitney-Hanson Industries, Inc. Winthrop H. Whitney has been named chairman of the board.

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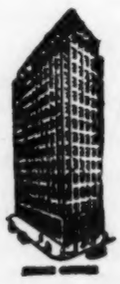

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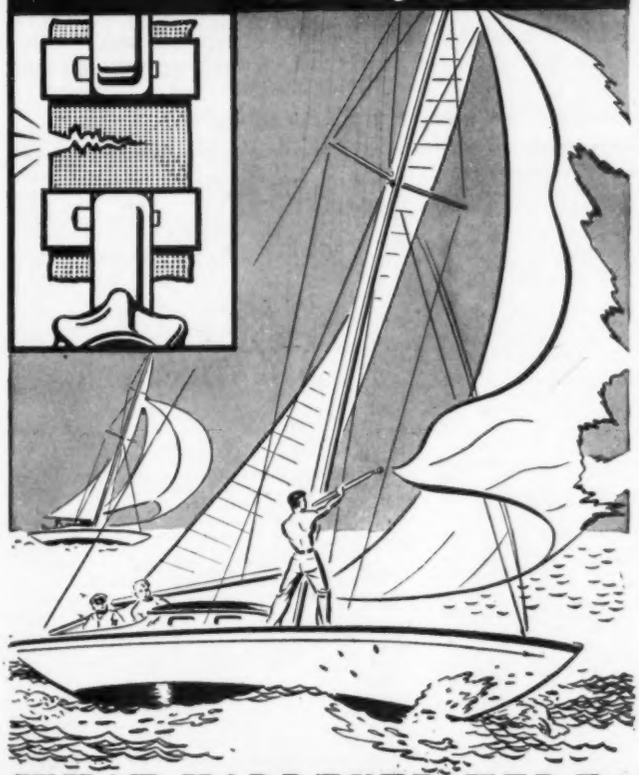

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GENERAL ECONOMIC, MANAGEMENT . . .

4. HOW FACTORING CAN INCREASE PROFITS—Describes how factoring works out in keeping clients' capital liquid and attitude of factor toward checking credits, including typical balance sheet.—COMMERCIAL FACTORS CORP., New York City.

5. FACTORING AND FINANCING — Illustrated booklet on how factoring works, cost and credit information.—TEXTILE BANKING COMPANY, New York, N. Y.

6. SERVING THE TEXTILE INDUSTRY—Illustrated booklet on services of textile and industrial consultants in assisting mill management.—WERNER TEXTILE CONSULTANTS, INC., New York 17, N. Y.

7. RAYON TELLS ITS STORY TO THE PUBLIC—Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public.—AMERICAN VISCOSE CORPORATION, New York 1, N. Y.

8. WHAT DOES A FACTOR DO — Illustrated booklet with case histories.—MEINHARD, GREEF & CO., INC., New York 10, N. Y.

9. TESTING IN MODERN INDUSTRY—This booklet includes many useful tables, conversion factors, equivalent yarn sizes and other information helpful in textile mills. Also describes specialized testing service. Available free to mill men on request.—UNITED STATES TESTING CO., Hoboken, New Jersey.

10. "LABOR AND MANAGEMENT BENEFIT BY INDUSTRIAL ENGINEERING PRINCIPLES" — 8-page illustrated folder outlining principles of industrial engineering as they apply to textiles.—AMERICAN ASSOCIATED CONSULTANTS, INC., New York, N. Y.

11. FLETCHER JUNIOR "SUPER-SELF-BALANCING" EXTRACTOR—Illustrated folder describing this new extractor with the highly efficient self-balancing arrangement which uses steel springs instead of rubber buffers.—FLETCHER WORKS, INC., Philadelphia, Pa.

PLANT AND PLANT MAINTENANCE . . .

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. RIHCO TYPE B HUMIDIFIER HEADS—Bulletin describes new atomizers with construction lessening air consumption. — ALDRICH MACHINE WORKS, Greenwood, S. C.

115. ATOMIZER HUMIDIFIERS—Recent issue of "Parks' Parables" on Turbomatic self-cleaning humidifiers, and automatic regulation — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

129. BAHNSON CENTRIFUGAL HUMIDIFIER—Bulletin 327 describes this completely self-contained industrial humidifier which requires only water feed and drain and electrical connection to install.—THE BAHNSON COMPANY, Winston-Salem, N. C.

132. ROOF, WALL AND FLOOR INSULATION—Illustrated booklets on uses of PC Foamglas Insulation and describing its waterproof, fireproof and permanent insulating properties. — PITTSBURGH CORNING CORP., Pittsburgh 22, Pa.

135. SAFETY COLOR CODE—How six standard colors can be used to reduce hazards, cut down accidents.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Division, C44, Wilmington, Dela.

138. MAGNESIUM IN THE TEXTILE INDUSTRY—Illustrated booklet on properties of magnesium for spinning, twisting, winding, knitting machines, looms, beams, spools, bobbins.—ALUMINUM CO. OF AMERICA, Pittsburgh, Pa.

151. INDUSTRIAL BRUSHES—Illustrated Booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS' SONS, INC., Cedar Grove, N. J.

152. AIR CONDITIONING FOR THE TEXTILE INDUSTRY—40-page illustrated book covering air conditioning from humidity control to complete refrigerated conditioning with installations, charts, covering ABC's of cooling textile mills.—CARRIER CORP., Syracuse, N. Y.

155. GLASS BLOCKS—28-p. booklet with illustrations, engineering data, patterns PC glass blocks. —PITTSBURGH CORNING CORP., Pittsburgh 22, Pennsylvania.

159. BAHNSON HUMIDUCT SYSTEM — Bulletin 330 describes this unit system of air conditioning for humidifying, cooling, heating, ventilating, filtering, and dehumidifying in any desired combination. —THE BAHNSON CO., Wnston-Salem, N. C.

160. INSTALLING MACHINERY WITHOUT LAG SCREWS OR BOLTS — Booklet describing use of UNISORB pads for anchoring all types of machinery. —THE FELTERS COMPANY, Boston, Mass.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs, as well as preserving textile mill floors.—G. H. TENNANT COMPANY, Minneapolis 11, Minn.

163. LAWLOR FLOOR MACHINES — Illustrated pamphlet containing specifications and describing All-Purpose Floor Machines.—THE SELIG COMPANY, Atlanta, Ga.

166. OAKITE PLANT MAINTENANCE DIGEST—A 16-page manual describing materials and methods for handling 54 recurring maintenance cleaning and related tasks in factories and mills.—OAKITE PRODUCTS, INC., New York 6, N. Y.

167. DU PONT COLOR CONDITIONING FOR INDUSTRY—Booklet, color used to reduce maintenance costs, increase production, curtail fatigue, improve employee morale. — E. I. DU PONT DE NEMOURS & CO. (Inc.), FINISHES DIVISION, Wilmington, Delaware.

168. DIAMOND VULCANIZED FIBRE HOLLOW WARE—Catalog HW-11 describing and illustrating boxes, trucks, cars, barrels, baskets, and trays made of Diamond Fibre for use in textile mills.—CONTINENTAL-DIAMOND FIBRE CO., Newark 11, Del.

170. WHY IT PAYS TO ANCHOR YOUR MACHINE WITH UNISORB—Illustrated booklet discussing control of vibration and noise and how UNISORB reduces maintenance costs.—THE FELTERS CO., Boston, Mass.

171. SULLIVAN T8-WG9—Illustrated bulletin describing the Sullivan line of heavy duty air compressors.—SULLIVAN DIVISION, JOY MFG. CO., Pittsburgh, Pa.

172. VENTILATING FANS—Bulletin 3339 gives facts on Buffalo Ventilating Fans. — BUFFALO FORGE CO., Buffalo, N. Y.

173. HUMIDITY—This booklet includes data on Walton Humidifiers and discusses problems of handling new fibers and other changed conditions in mills.—WALTON LABORATORIES, INC., Irvington, 11, N. J.

175. MOISTURE—Illustrated Folder, "The Yarn Conditioning System for the Textile Industry of Tomorrow."—KEARNY MFG. CO., INC., Kearny, N. J.

176. AUTOMATIC SELF-CLEANING ATOMIZER HUMIDIFIERS—Latest bulletin describing same.—AMERICAN MOISTENING CO., Providence, R. I.

177. DUCTLESS AIR CONDITIONING — Recent bulletin describing same.—AMERICAN MOISTENING COMPANY, Providence, R. I.

178. WELDING FITTINGS & FLANGES — 240-page catalog describing the Tube Turns line of more than 4,000 items and including an engineering and technical section containing valuable data for the piping engineer.—TUBE TURNS, INC., Louisville 1, Ky.

179. TOLEDO SCALES — A condensed catalogue which illustrates and describes all of the principal types of weight control equipment used in the textile industry. — TOLEDO SCALE COMPANY, Toledo, Ohio.

180. TANK MAINTENANCE — Illustrated folder describing R. E. McLean's methods of cleaning and painting water tanks and stand pipes. — R. E. McLEAN, Gastonia, N. C.

181. AIR FILTRATION AND DUST CONTROL—24 pages on atmospheric control, including engineering data.—AMERICAN AIR FILTER CO., INC., 275 Central Avenue, Louisville 8, Ky.

182. 27 WAYS TO USE FABARICATED PLASTICS—This highly illustrated bulletin presents the newest developments in plastics fabrication, with suggestions as to how plastics may be applied to many industrial products.—FABRI-FORM CO., Byesville, Ohio.

183. ELECTROMAGNETS — Folder No. 99 describes and illustrates fire prevention practices for opening and picking by use of high intensity electromagnets and magnetic pulleys.—DINGS MAGNETIC SEPARATOR CO., 509 E. Smith St., Milwaukee 7, Wis.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

210. GOODYEAR MECHANICAL RUBBER GOODS CATALOG—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill.—GOODYEAR TIRE & RUBBER CO., Akron, Ohio.

211. JOHNSON BRONZE CATALOGUE NO. 460—Shows over 850 sizes of cast bronze bushings, 350 sizes of UNIVERSAL Bronze Bars and over 250 Electric Motor Bearings. — JOHNSON BRONZE COMPANY, New Castle, Penna.

212. GATES TEXTILE ACCESSORIES — Showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions.—THE GATES RUBBER COMPANY, Denver, Colo.

216. LEATHER BOOKLET NO. 202 — Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Solid Round Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

218. BALL BEARINGS ON TEXTILE MACHINERY—Catalog 9 gives advantages of ball bearings, describes types, illustrates each type of textile machinery.—THE FAFNIR BEARING CO., New Britain, Connecticut

231. V-BELT ENGINEERING DATA BOOK—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. — MANHATTAN RUBBER MANUFACTURING DIV. of Raybestos-Manhattan, Inc., Passaic, N. J.

235. JOHNSON LEDALOYL BEARING BRONZE—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings.—JOHNSON BRONZE COMPANY, New Castle, Pennsylvania.

236. LEATHER BELTING CALCULATOR—Handy and attractive calculator for determining belt, speeds, horsepower per inch of belt widths, etc., will be sent free on request.—J. E. RHOADS & SONS, Philadelphia, Pa.

237. FAFNIR BALL BEARINGS FOR THE TEXTILE INDUSTRY—Outlining the application and advantages of ball bearings on textile machinery.—FAFNIR BEARING CO., New Britain, Conn.

244. TEXACO SPINDURA OILS—Folder on lubrication for all types of spindles, based on actual tests.—TEXAS CO., New York City.

246. CUTTING OPERATING COSTS—Nationwide Illustrated Survey showing how American textile mills cut operating costs with Multiple V-Belt Drives.—GATES RUBBER CO., Denver, Colorado.

263. NEEDLE ROLLER BEARINGS—Catalog Engineering and Application Data Edition 32 contains full data on selection of proper Needle Roller Bearings and outlines uses of such in various commodities including textile uses, types, installations, lubrication, etc. — TORRINGTON COMPANY, Torrington, Conn.

264. NEW DEPARTURE SHOP MANUAL—Illustrated catalog showing ball bearing mounting and maintenance practice. Covers storage, cleaning, lubrication, types of bearings.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

265. INTERCHANGEABLE BALL BEARING FOR REPLACEMENT—Charts showing numbers used by manufacturers to identify bearing characteristics, also information on specifications.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

269. LUBRICATION AND MAINTENANCE OF BALL AND ROLLER BEARINGS—Illustrated bulletin describing efficiencies and economies of NON-FLUID OIL for all types ball and roller bearings — NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

270. MANHATTAN FLEXLASTICS — Illustrated booklet describing how flexlastics are used in the Manhattan and Condor line of belting and mechanical rubber goods.—MANHATTAN RUBBER DIVISION, Passaic, N. J.

271. CARDING, SPINNING AND WEAVING LUBRICATION—Informative bulletins describing advantages of NON-FLUID OIL over ordinary lubricants for the lubrication of carding, spinning and weaving machinery.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

272. HOUGHTON LUBRICATION CHART — Attractive chart listing lubrication recommendations for all mill departments and various textile machines.—E. F. HOUGHTON AND CO., Philadelphia, Penna.

276. SPEED CONTROL—Bulletin 20B6051G describes Texrope variable speed drives. — ALLIS-CHALMERS MFG. CO., Milwaukee 2, Wis.

277. PRECISION COMPOUND AND CHAIN DRIVE—Folder explaining more profitable operation of roving frames.—PRECISION GEAR AND MACHINE CO., Charlotte, N. C.

278. ROLLER BEARINGS—New 35-page Hyatt handbook, "Guide Lines," is a guide to the proper application of cylindrical roller bearings in machinery and equipment of all types.—HYATT BEARINGS DIV., General Motors Corp., Harrison, N. J.

279. OILITE BULLETIN—Discussion of uses of oil-cushioned, self-lubricating bearings in product design and maintenance is contained in this illustrated bulletin. A wide range of machine parts is offered.—AMPLEX DIV., CHRYSLER CORP., Detroit 31, Mich.

INSTRUMENTS, STEAM SPECIALTIES . . .

304. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

307. THERMOMETER AND PRESSURE GAUGES—Catalog 6705-R and 6706 give data on both circular and rectangular case pressure type thermometers for indicating, recording and controlling processing operations in textile industry.—BROWN INSTRUMENT COMPANY, Philadelphia, Pennsylvania.

311. PIPING POINTERS—Industrial maintenance book covering installation and handling of piping, valves, fittings. Well illustrated, practical tips. — CRANE CO., Chicago, Ill.

314. MOISTURE CONTENT CONTROL — Bulletin F-1705-1 giving details of features and benefits of moisture equipment control for slashers and textile applications. — BARBER-COLMAN CO., Rockford, Ill.

313. CONTROL INSTRUMENTS FOR TEXTILE PROCESSES—32-page illustrated booklet describing controls for such processes as slashing, dyeing, bleaching, kier boiling, drying, air-conditioning, etc. —BROWN INSTRUMENT CO., Philadelphia, Penna.

318. HYDRAULIC POWER UNITS—Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operation of hydraulic calenders, presses, hydraulic controls, etc.—B. F. PERKINS & SON, INC., Holyoke, Mass.

317. POWELL VALVES FOR CORROSION RESISTANCE—20-page booklet which briefly describes and illustrates the very complete line of Powell valves available in a large variety of metals and alloys to handle all corrosive fluids—to help solve flow control problems where corrosion may be encountered.—THE WILLIAM POWELL CO., Cincinnati 22 Ohio.

320. OAKITE POWER PLANT DIGEST—A 32-page manual describing materials and methods for handling fi cleaning, degreasing, descaling, derusting, paint-stripping and related operations encountered in power plants.—OAKITE PRODUCTS, INC., New York 6, N. Y.

321. RED RAY BURNERS—Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED RAY MFG. CO., New York, N. Y.

322. DIAMOND SWING JOINTS—4-page illustrated folder describing the Diamond line of ball, swing and revolving joints for use on any system handling air, gas, steam, oil, or any fluid where reflexible connection is needed. — DIAMOND METAL PRODUCTS CO., St. Louis, Mo.

323. TENTER FRAME DRYER—Illustrated folder describing the features and operating principle of newly designed, high speed tenter frame dryer.—NATIONAL DRYING MACHINERY COMPANY, Philadelphia 33, Pa.

CARDING, SPINNING, WINDING, ETC. . . .

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409. ROTO CONER—Bulletin describing Universal rotary traverse winder, known as the Roto Coner, producing open wound cones for knitting and warping; parallel tubes for package dyeing, twisting, and sale yarn.—UNIVERSAL WINDING CO., Providence, Rhode Island.

413. SONOCO PRODUCTS—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc.—SONOCO PRODUCTS CO., Hartsville, S. C.

416. THE BRIEF SAGA OF THE RING TRAVELER—An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of the ring traveler, the development of the spindle, and the invention of Rabbath's Bolster type spindle are covered.—NATIONAL RING TRAVELER CO., Pawtucket, R. I.

419. TEXTILE APRONS—Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery.—TEXTILE APRON COMPANY, East Point, Ga.

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431. HYGROLIT YARN CONDITIONING SYSTEM—General description of conditioning cotton, spun rayon, woolens, worsteds for twist setting, lubrication, moisture retention.—KEARNY MANUFACTURING COMPANY, INC., Kearny, N. J.

432. PRECISION TEXTILE WINDING—Bulletin on Kidde Tension and Density Control for winding rubber cones. — WALTER KIDDE & CO., INC., Belleville, N. J.

433. AUTOMATIC TRAVELING CLEANERS—Recent issue of Parks' Parables on automatic cleaners for spinning, warping, twisting.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

434. WINDING MACHINES—WORK LOAD CALCULATIONS—Reprints of series on winder operations from labor standpoint.—UNIVERSAL WINDING CO., Providence, R. I.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER — Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording.—SCOTT TESTERS, INC., Providence, R. I.

437. SPINDLE TAPE LACING EQUIPMENT—Circular No. 54 illustrating and describing the Clipper method of joining spindle tapes.—CLIPPER BELT LACER CO., Grand Rapids 2, Mich.

440. SADDLES—Leaflet showing a few of the over 400 different types of saddles for both conventional and long draft spinning and roving frames.—DIXON LUBRICATING SADDLE CO., Bristol, Rhode Island.

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443. COMPARATIVE YARN TABLE—Chart giving woolen number (cut and run system) also cotton, worsted and metric system; also, Comparative Rayon Denier Yarn Table.—VICTOR RING TRAVELER CO., Providence, R. I.

444. SOL LUSTRE—Attractive illustrated booklet describing Houghton's soluble softening and conditioning oils for textile fabrics and yarns.—E. F. HOUGHTON AND CO., Philadelphia, Penna.

448. ROLLER BEARING SPINDLES—Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described.—THE MARQUETTE METAL PRODUCTS CO., Cleveland, Ohio.

447. HUBBARD STAINLESS STEEL SPOOLS—Illustrated leaflet describing the corrosion proof, easily cleaned, indestructible and perfectly balanced Hubbard spools and bobbins.—HUBBARD SPOOL CO., Chicago, Illinois.

448. NUMO AUTOMATIC SPINNING CONTROL—Illustrated literature describing the new automatic spinning control that gives uniform size, uniform tail and many other benefits.—NUMO MACHINE & ENGINEERING CO., Charlotte, N. C.

449. FOSTER BULLETIN A-95 — Describes the modern Foster Model 102 winder that eliminates ribbon wind. — FOSTER MACHINE CO., Westfield, Mass.

450. IONOTRON STATIC ELIMINATORS—A 4-page, illustrated catalog section describes a new static eliminator which operates without electric power or physical contact. There is no operating expense.—U. S. RADIUM CORP., New York 7, N. Y.

451. SKEIN REELERS—Detailed folder shows introduction of basically new design and a new method of skein reeling.—FIDELITY MACHINE CO., INC., 3936 Frankford Avenue Philadelphia 24, Penn.

452. DEVELOPMENTS IN WARP SIZING—Technical bulletin describing the successful new development of applying a warp lubricant separately from and subsequent to sizing with starch and in the same operation. This patented process involves the use of a Warp Lubricator Unit and SLIX, a new one-piece liquid sizing material.—SOUTHERN SIZING CO., Atlanta, Ga.

453. CHAPMAN STATIC NEUTRALIZER — The "how" and "why" of this unit are covered in this bulletin, plus the factors affecting successful application to cotton cards, woolen cards, and cotton drawing frames.—CHAPMAN ELECTRIC NEUTRALIZER CO., Portland, Maine.

WEAVING, SLASHING . . .

502. TEXTILE COUNTERS—Catalog T37 describing pick counters for looms, hank counters for spinning, yardage counters for cloth loom, etc.—VEEDER-ROOT, INC., Hartford, Conn.

510. THE ROMANCE OF PRAIRIE GOLD—Attractive illustrated book which tells the story of corn, and the uses of corn products in industry.—CORN PRODUCTS SALES CO., New York, N. Y.

512. BRIGHT SPOT IN THE PRODUCTION PICTURE—Folder on more loom speed through Hunt loom spreaders.—HUNT MACHINE WORKS, INC., Greenville, S. C.

513. SEYCO PENETRANTS FOR YARN CONDITIONING—Folder describing the scientifically formulated Seyco sizing. — SEYDEL-WOOLLEY & CO., Atlanta, Ga.

514. SLASHER HOODS — Pamphlet describing drip-proof slasher hoods for cotton or rayon slashers. Roof or sidewall exhaust.—WOLVERINE EQUIPMENT CO., Cambridge 42, Mass.

515. TEXTILE COUNTERS—Catalog No 50 illustrating and describing complete line of Productmeter Loom Pick Counters; Hank Counters; Yardage, Electric and Preisetermined Counters; Tachometers, etc. — DURANT MANUFACTURING CO., Milwaukee, Wisconsin.

516. WEAVE ROOM ACCESSORIES—Weave room accessories catalog and literature on new plastic, bronze bearing sheave, which solves a troublesome weave room problem.—EMMONS LOOM HARNESS COMPANY, Laurence, Mass.

518. NIAGARA TWIST-SETTER—Folder describing the revolutionary Niagara Twist-Setter which has no moving parts. The yarn is sprayed from all sides to afford maximum uniformity.—SEYDEL-WOOLLEY & CO., Atlanta, Ga.

519. WOODEN BEAM HEADS, WARPER BEAMS, AND WARPING MACHINERY FOR ALL FIBERS—62-page, illustrated booklet descriptive of and giving specifications for the Allen line of beam heads, warper beams, warping machinery, stop motions and cloth rolls.—ALLEN COMPANY, New Bedford, Mass.

521. STEEL WARP BEAMS—20 page catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broadloom and narrow fabrics. Also Textile Machinery Specialties.—MILTON MACHINE WORKS, Milton, Pa.

522. STARCH STABILIZER — Leaflet describing new material to prevent jelling and to improve the cold fluidity of starch dispersions.—R. T. VANDERBILT COMPANY, New York 17, N. Y.

523 RAYON WARP SIZING—12-page illustrated booklet. — CHARLES B. JOHNSON MACHINE WORKS, Paterson, N. J.

524. JOHNSON WARP SIZER—12 page fully illustrated booklet, describing the 7 cylinder sizer with stretch indicator and finger-tip control of stretch. A point-by-point analysis. — CHARLES B. JOHNSON MACHINE WORKS, Paterson, N. J.

525. GATES LOOM ACCESSORIES — Catalogs MRG-418, MRG-431, MRG-433 describe the advantages of lug straps, harness straps and drop box pickers made from a remarkable new material called Tex-Hide. Catalog MRG-419 describes the advantages of a new "Tractive-Rib" take-up roll covering.—GATES RUBBER CO., Denver 17, Colorado.

527. COTTON SLASHERS—Photographs and detailed information are contained in this 16-page folder which describes the new WPF&M Slasher. Also included in the folder are descriptions of three types of creels and head ends and other advanced optional equipment.—WEST POINT FOUNDRY & MACHINE COMPANY, West Point, Ga.

DYEING, FINISHING, CLOTH ROOM . . .

602. ALUMINUM IN THE CHEMICAL INDUSTRY—Published by Aluminum Company of America. Seventy-eight pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. — ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY—Illustrates descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes Preboarding and Automatic Boarding Machines for hosiery.—PROCTOR & SCHWARTZ, INC., Philadelphia, Pa.

611. BRUSHING AND SHEARING MACHINES—Illustrated literature on the new Hermas Brushing Machine for use light sheeting to heavy ducks; also on Hermas AV Shears.—HERMAS MACHINE CO., Hawthorne, N. J.

613. RADIANT HEAT IN TEXTILE INDUSTRY—New illustrated book on uses of radiant heat, data on fuel consumption, evaporation, etc.—RED-RAY MFG. CO., New York, N. Y.

614. STRIPS IN ROLLS—Form No. CF-642 illustrated folder showing over 25 slitters and roll winders for textile use.—CAMERON MACHINE CO., Brooklyn, New York.

616. ENGINEERING PROPERTIES OF MONEL—Technical Bulletin T-5, giving detailed information on strength and ductility, working properties, resistance to various types of corrosion and other data on Monel Metal. — INTERNATIONAL NICKEL CO., INC., New York, N. Y.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING—Illustrated folder describing the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation.—TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

619. 3 FOR 5—Illustrated folder describing features of Blickman stainless steel Dyeboxes. — S. BLICKMAN, INC., Weehawken, New Jersey.

620. DYE HOUSE VENTILATION—Pamphlet describing stainless steel exhaust systems for piece dye kettles. Equipment for stock dye houses. Tempering supply air units and controls.—WOLVERINE EQUIPMENT CO., Cambridge 42, Mass.

621. INFRA-RED RADIANT HEAT GENERATORS—Illustrated bulletin on infra-red technology and applications throughout Textile pre-drying, drying, polymerizing, printing, and other heat-processing operations. — CARBOMATIC CORPORATION, New York, N. Y.

622. FILT-R-STIL—Attractive illustrated booklet describing the FILT-R-STIL method of chemically purifying water.—AMERICAN CYANAMID & CHEMICAL CORP., New York 20, N. Y.

623. TENSION CONTROLS—Form No. C. F. 449 illustrating various types of unwind stands for use in maintaining constant tension on web. Some equipped with photo-electric side register controls.—CAMERON MACHINE CO., Brooklyn 2, N. Y.

625. BALL BEARING ROLLER TYPE SCRAY—Circular No. 994 describing this scray which is for use in handling heavy and large size rolls of cloth. This is used either in finishing plants or in the cloth room of cotton mills.—BIRCH BROS., INC., Somerville, Mass.

627. SEVEN TANK BALL BEARING CRABBING MACHINE — Circular 999 describing this machine which has the pressure applied to the Squeeze Rolls by Air Cylinders and the drive of each pair of Nip Rolls is by individual motors synchronized to keep uniform tension throughout the machine. — BIRCH BROS., INC., Somerville, Mass.

629. ELIMINATION OF SALT HANDLING AND WASTE—Information about the Storage-Type Lixator.—INTERNATIONAL SALT CO., INC., Scranton, Pa.

630. VAT DYEING OF WOOL—Write for Calco-Technical Bulletin No. 797 outlining fundamental dyeing procedures, and explaining new advances in the technology of wool dyeing and finishing.—CALCO CHEMICAL DIVISION, AMERICAN CYANAMID CO., Round Brook, N. J.

631. THE LIXATE PROCESS—Fully illustrated booklet describing process for scientifically controlled brine operation.—INTERNATIONAL SALT CO., INC., Scranton, Pa.

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633. PRINTING WITH ARIDYE PIGMENT COLORS—Bulletin P-1 describes preparation and application of pigmented water-in-oil emulsions for printing cotton, rayon, and other fabrics.—INTERCHEMICAL CORPORATION, TEXTILE COLORS DIVISION, Fair Lawn, N. J.

634. APPLICATION OF INTERCHEM ACETATE DYES—Bulletin IAD-1 describes procedures for dyeing and printing acetate rayon and nylon fabrics with new line of highly dispersed acetate dyes.—INTERCHEMICAL CORPORATION, TEXTILE COLORS DIVISION, Fair Lawn, N. J.

DYESTUFFS, CHEMICALS, SOAPS . . .

704. THE TEXTILE APPLICATION OF METASOL (CALGON)—Handbook with detail information covering the use of Metasol in Scouring, Bleaching, Dyeing and Finishing.—BURKART-SCHIER CHEMICAL CO., Chattanooga, Tenn.

705. THEORETICAL AND APPLIED SILK-SOAKING—Attractive 23-page booklet outlining methods of silk-soaking and outlining investigations on the soaking, back-winding and degumming of silk.—HART PRODUCTS CORP., New York City.

713. LIOVATINE ED—Vat dyeing assistant increasing penetration and level dyeings with maximum yield of color.—SANDOZ CHEMICAL WORKS, New York City.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletins on Aquarol, water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and rayon, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

717. FINISH KB — Finishing compound designed as binder in combination with filling and stiffening compounds. Avoids dusting, ingures draping qualities. — SANDOZ CHEMICAL WORKS, New York City.

731. WET PROCESSING AGENTS FOR EVERY TEXTILE APPLICATION—Folder listing processing agents for hosiery and underwear, yarns and piece goods woolens, etc.—BURKART-SCHIER CHEMICAL COMPANY, Chattanooga, Tenn.

738. LEVELENE—Booklet describing use of Levelene for leveling vat and direct colors. Also for stripping down vat colors.—AMERICAN ANILINE PRODUCTS, INC., New York, N. Y.

740. MONSANTO CHEMICALS—212 page illustrated buyers' guide for users of chemicals including useful tables, chemical information.—MONSANTO CHEMICAL COMPANY, St. Louis, Mo.

743. HOOKER ELECTROCHEMICAL GENERAL PRODUCTS LIST — Bulletin 100, listing approximately 100 chemicals, including 15 new products, giving descriptions and characteristics of each chemical and its uses.—HOOKER ELECTROCHEMICAL COMPANY, Niagara Falls, New York.

746. COHABIL RT—Technical bulletin on Drew Tested Synthetic Softener, Plasticizer, other agents for Rayon crepe soaking, warp sizing.—E. F. DREW & CO., Boonton, N. J.

747. NAPTHOLE TK — Technical bulletin on Drew Tested Products for Kier Boiling Cotton, Washing Cotton Knit Goods.—E. F. DREW & CO., Boonton, N. J.

749. LUPOMIN Q—Pamphlet outlines the application of the quaternary ammonium compound recommended for treating natural and synthetic fibres to give soft hand, lubrication, odorless finish, brighter shades, etc.—JACQUES WOLF & CO., Passaic, N. J.

750. TEXTILE PRINTING — Folder on textile printing thickeners for vat, azoic, chrome colors fast blacks, white discharge, resist, and pliese applications. — NATIONAL STARCH PRODUCTS, INC., New York 16, N. Y.

752. CAUSTIC SODA BOOK—Elaborate 72-page text containing useful graphs, charts, diagrams and descriptive photographs designed for use of the technical men, buyers, executives, operating officials and engineers in textile mills.—COLUMBIA CHEMICAL DIVISION, PITTSBURGH PLATE GLASS CO., Pittsburgh 13, Pa.

754. THE ION EXCHANGE PRINCIPLE AND ITS APPLICATIONS—8-page illustrated folder illustrating the manner in which ionac and ion exchange materials are applicable to the textile field.—AMERICAN CYANAMID COMPANY, New York 20, New York.

755. LUPOMIN—Leaflet outlines the advantages of the cation active softener which is suitable for use on cotton, linen, silk, wool, synthetic fibres and mixed fabrics. A small percentage of lupomin gives a supple, smooth hand.—JACQUES WOLF & CO., Passaic, New Jersey.

756. POPULAR INDUSTRIAL CHEMISTRY—This information booklet will be of interest to all textile chemists, dyers and finishers.—KALI MFG. CO., Philadelphia, Pa.

758. CEGLIN—Attractive illustrated booklet describing the application of ceglin (cellulose ether) to many types of fabrics. — SYLVANIA DIVISION, AMERICAN VISCOSE CORP., New York 17, N. Y.

761. CHEMICALS FOR THE TEXTILE INDUSTRY—Attractive 30-page booklet describing uses and properties of a full line of textile chemicals.—ROHM & HAAS CO., Philadelphia, Pa.

763. TRITON 770 FOR TEXTILE PROCESSING—12-page technical bulletin describing this efficient synthetic surface-active agent, with practical formulations for its application in all phases of textile wet processing.—ROHM & HAAS CO., Philadelphia, Pennsylvania.

764. GENERAL PRODUCTS LIST—20 page illustrated booklet providing complete information on Hooker chemicals and outlining the specialized Hooker processes.—HOOKER ELECTROCHEMICAL COMPANY, Niagara Falls, N. Y.

765. HOSIERY FINISHES AND FORMULAE—Attractive new booklet describes the Amalgamated line of hosiery finishes and giving numerous finishing formulae.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

766. DU PONT PEROXIDE BLEACHING SYSTEMS—New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Dela.

767. STYMER—Booklet describing the totally new sizing and finishing agent for rayons, cottons and worsteds.—MONSANTO CHEMICAL CO., St. Louis, Mo.

769. SURFACE TENSION DEPRESSANT — The Booklet, "Mercerizing and Alkamerce—The Ideal Dry Mercerizing Penetrant," introduces a new product which can be used as a wetting agent, a dye leveling agent, a penetrant in package dyeing.—HART PRODUCTS CORP., New York, N. Y.

769. TEXTILE CHEMICALS—Buying guide and reference book giving facts about Amalgamated Products, the fabrics on which they give best results, their proper application, and their chemical composition.—AMALGAMATED CHEMICAL CORP., Philadelphia 34, Pa.

770. SPECIAL FINISHES FOR SERVICE, PROTECTION AND APPEARANCE—Contains tabulated list under following categories: Water-Repellent, Waterproof, Absorbent, Antiseptic, Flameproofing, and Fireproofing, and Character Finishes, and Moth preventives. Trade names of 140 finishes listed.—UNITED STATES TESTING CO., Hoboken, N. J.

771. "STARCH STABILIZER" — Folder on Vanesta, a product used for textile sizing and printing, discussing stabilization and the results obtained. —R. T. VANDERBILT CO., New York 17, N. Y.

772. "STANDARD SILICATE ALKALIES"—Booklet descriptive of silicate and silicated alkalies and their uses. These uses include for silk weighting, in peroxide bleaching, boiling off cotton, textile finishing, etc. — DIAMOND ALKALI COMPANY, Pittsburgh 22, Pa.

773. TECHNICAL CHEMICAL DATA SHEETS—Complete set for dyeing, printing and finishing operations, showing major operations, performance and advantages.—ONYX OIL & CHEMICAL CO., Jersey City 3, N. J.

KNITTING . . .

801. THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

803. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste.—H. W. BUTTERWORTH & SONS CO., Philadelphia, Pa.

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822. HIGH SPEED JERSEY CIRCULAR MACHINE—Completely illustrated brochure showing features and highlights of this 100 yard per hour producer. Also available—NEW CYLINDER CHART. —SUPREME KNITTING MACHINE CO., INC., 105 Johnson Ave., New York.

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MISCELLANEOUS . . .

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TEXTILE INDUSTRIES, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the March 1948 issue of TEXTILE INDUSTRIES.

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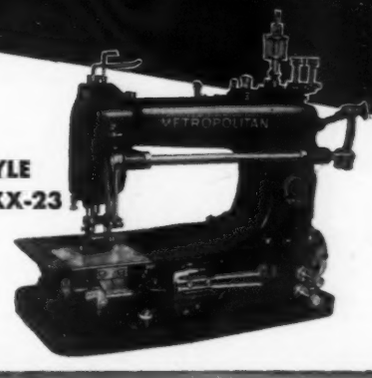

STYLE 992-XX-23

WILLCOX & GIBBS SEWING MACHINE CO.

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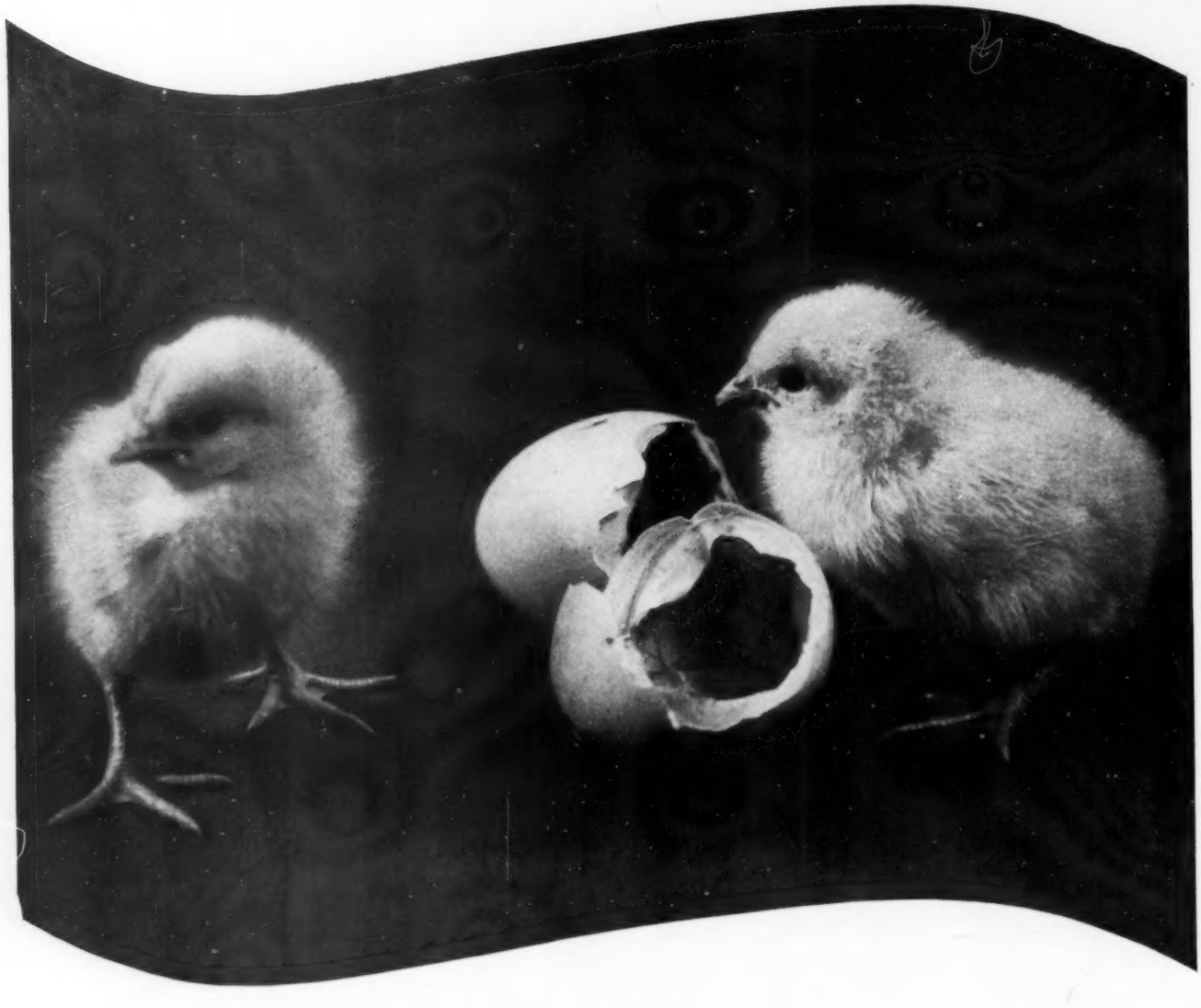

Which came first?

The old question about the chicken and the egg has a parallel in the hosiery industry, i.e., which comes first—new ideas in hosiery or new ideas in knitting machinery?

The answer is immaterial. The point to remember is that neither would be possible without the other. So, to produce new and interesting ideas in hosiery NOW is the time to plan modernization of your equipment.

We say NOW even though orders for certain types of machines cannot be filled immediately. For a good modernization plan takes time to work out . . . and good machines take time to produce. Take time now to plan ahead carefully for more efficient and varied hosiery production.

SCOTT & WILLIAMS, INC.

Established 1865

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Handling Nylon Hosiery

(A Survey of Mill Practices)

Staff Prepared

WHEREVER full-fashioned hosiery men gather, the conversation eventually turns to the problem of picks and pulls in sheer nylon hosiery—and what can be done to reduce these imperfections.

Because of the tremendous financial loss to the industry by lowering of grade caused by picks and pulls, a survey has been made of handling methods in some of the well-known mills of the country, located in the South and the East.

The results of this survey will be interesting to the hosiery industry, and especially to the full-fashioned branch. A study of the survey may bring forth pointers on handling which will aid a mill in reducing picks and pulls if the system described is adopted.

In this survey the mills are not identified, but are reported by number.

Mill No. 1. All employees are required to remove jewelry from their hands upon reporting for work; this includes every worker who is required to handle hosiery in any manner. Each employee—knitter, looper, seamer, inspector, preboarder, boarder, pairer, and packager—is required to use a hand lotion for smoothness.

The hose are tied in bundles at the knitting machines and they are passed to each succeeding process in this form prior to dyeing. They are put into double or lined mesh bags (after inspection) for dyeing and extraction of moisture content.

Twelve dozen hose are arranged in individual piles to be carried to the inspection and pairing tables.

The individuals that move the hose from one department to another are required to wear white cotton gloves. They also wear gloves when storing unfinished hosiery.

After each pair is laid on a piece of cellophane paper, hands do not touch them. A special-built machine folds the paper into the form of individual packages and also stamps the trademark, size, gauge, color, denier, etc., on the package.

Mill No. 2. Knitters place a piece of canvas around each lot of 12 dozen hose. This is the container for the hosiery during passage to each process. A lot ticket is made for these hose and is attached to the canvas container when it leaves the knitter.

The knitters, and operatives at each succeeding process, place their identification number on the ticket, enabling a defect made by the knitter to be traced to his machine.

A stockroom employee collects the production at each machine and keeps it in a special room until ready for the next process.

Mill No. 3. This plant has found that picks and pulls occur on the knitting machines at such points as welt bars, take-off rolls, and drawing rolls.

Knitters are taught to be careful when taking a set off, to avoid letting the hose fall on the end of the welt shaft. They are also instructed to hold the hosiery away from their clothing and the machine when picking them up.

The knitters do not use gloves,

What Mills are Doing to Prevent Picks and Pulls

(1) Operatives are not allowed to wear jewelry on clothes or hands.
(2) The use of hand lotion or cream is required.
(3) The use of gloves is required.
(4) Emery boards and other instruments are supplied to keep hands and fingernails smooth.
(5) Inspectors periodically check operatives' hands for roughness.
(6) Operatives are trained to be careful when handling hosiery.
(7) Tables, chairs, and other pieces of equipment are covered with cloth to prevent damage in case of accidental contact.
(8) All equipment is periodically inspected for rough edges or surfaces.
(9) Maintenance of knitting machinery includes careful deburring of all contact surfaces.
(10) Hosiery is wrapped adequately in blankets, covers, or bags, before moving from one department to another.
(11) Some mills have a full time manicurist to care for operatives' hands.
(12) Smooth finished containers are supplied to hold hosiery at various stages of production.

but they are instructed to keep their hands smooth. They are provided with hand cream and emery boards to keep their hands and finger nails free of rough places.

Each knitter wraps the day's work in a blanket which is three feet wide and four feet long. This is placed in a bin in the looping and seaming department. This bin is covered with soft cloth.

The looper unties the wrap in her lap, works on the hose from this bundle, and puts the hose back into the wrap after looping. She then puts this blanket of hose in a second cloth-covered bin for the seamer.

The seamer duplicates the loopers' handling procedure, reties the bundle, and sends it to the inspector. The inspector looks over the hose and ties all firsts back in the blanket.

The hose in the blanket are then carried to the preboarder. These operatives remove the hose from the blanket and place them on the boards for the steam setting. After preboarding, the hose are put into mesh bags for dyeing.

After the dyeing and extraction operations, the hosiery is boarded and carried to inspection-pairing tables on boards. A large number of these boards are loaded on a special-built truck for transportation to the next process.

None of the employees in this plant uses gloves in handling the hosiery, but an effort is made to keep the hands smooth. They are not allowed to wear jewelry of any kind on their hands while at work.

A report from the finishing room of this plant discloses that a 30-denier, 51-gauge construction for 1883 dozens boarded resulted in 1532 dozens of firsts and 16.03% of seconds broken down as follows: machine holes 1.81%, seamer hose .32%, re-dyes 1.54%, rings 5.24%, and picks or pulls 7.12%.

Mill No. 4. The knitter wraps five dozen hose together with nylon material and inserts these in a soft cotton muslin bag. The loopers and seamers remove the hose from these bags, and after completing work on them, replace the hose in this same bag.

The examiners receive the muslin bags of hosiery and inspect each pair, after which they are replaced in the bag and passed to the preboarder. At this process they are removed from the muslin bag, preboarded, put back in the bag, and carried to the dyeing department. The same bag contains the hose during the dyeing operations.

This topping table has too many rough places, and the operative's bracelet should be removed.

After extraction has been completed, the hosiery is placed on trucks covered with paper and carried to the boarding department. Upon completion of boarding, the stockings are placed on trucks with cardboard covers for transportation to the inspection and pairing department. After pairing has been completed, insertion in individual cellophane packages, followed by boxing, completes the handling of the stockings.

Soft cotton gloves are worn by examiners, preboarders, and boarders, when handling hosiery. Knitters use the conventional hand cream for combating roughness of hands. No employees are allowed to wear jewelry while on duty.

Wrapping hosiery as shown here helps to prevent pulls while moving bundle from one department to another.

Mill No. 5. Knitters use hand cream and tie the hosiery in bundles without a cover. They are passed to the loopers and seamers in this form. These operatives are also required to use hand cream before handling the hosiery. The bundles are passed to preboarders after inspection. All preboarders are required to wear white cotton gloves while on duty.

The hosiery is inserted in mesh bags for dyeing and finishing. The boarding department operatives also use white cotton gloves for handling stockings. Inspection-pairing and packaging follow boarding; the employees in this department use hand cream and are not allowed to wear any jewelry while on duty.

Boxing is done on tables, but no hands touch the hosiery during this process because the hose have already been packaged in cellophane containers.

Two hundred dozen of hose that were faulty in this plant were examined and broken down into the following classifications, each 100 dozen being a different style:

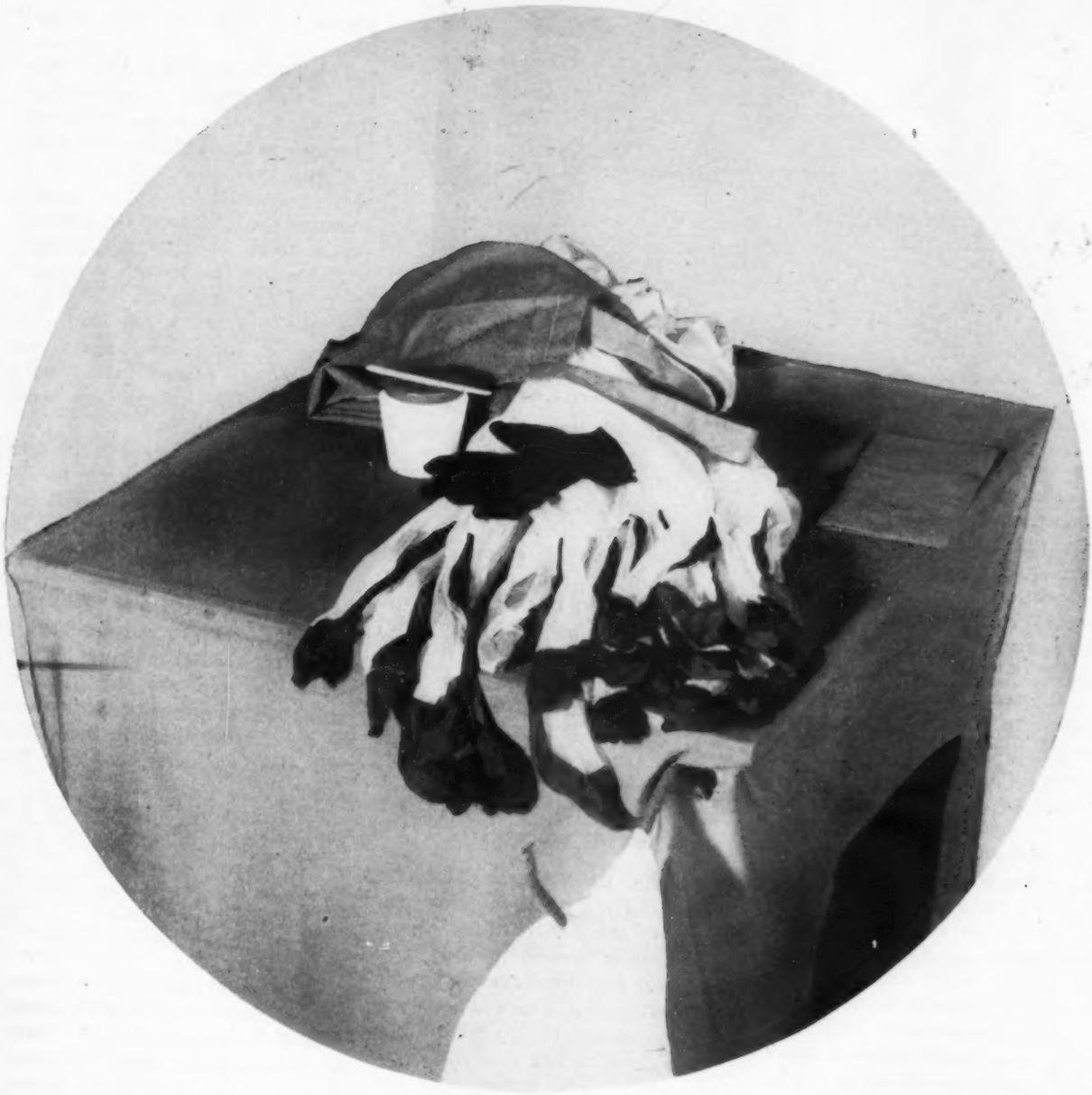
First style: Knitting machines. 6½ dozen; seaming, looping, and dyeing, 12 dozen; unskilled personnel, 2 dozen; carelessness (picks preboarded), 30 dozen; faulty raw material, 40 dozen; jewelry and rough hands, 9.2 dozen; vermin. 0.6 dozen.

Second style: Another hundred dozen of defective hosiery were broken down into the following classifications: Knitting machines. 5 dozen; seaming, looping, and dyeing, 20.9 dozen; unskilled personnel, 3.7 dozen; carelessness (picks preboarded), 29 dozen; faulty raw material, 35 dozen; jewelry and rough hands, 6 dozen; vermin. 0.8 dozen.

Mill No. 6. Knitters put the hosiery into bundles of 5 dozen each, in which form they are passed to the looper, seamer, inspector, and preboarder; the latter puts 3 dozen in each mesh bag for dyeing.

Knitter Hints (No. 21)

Pull thread eliminators



Four important pull thread eliminators—gloves, emery board, apron and hand cream. USE THEM!!!

finishing, and boarding.

After boarding, the hosiery is placed on square boards covered with paper for passage through the pairing and packaging processes.

Mill No. 7. Trays to hold ten dozen hose are situated close to the knitting machines. These trays containing the knitted hose are carried to the loopers who remove the stockings, and upon completion of looping, return the hose to trays. These trays are then carried to the seaming department. The seamers put the hose back into

At Mill No. 9 the tray system for handling hosiery is in use.

trays after completing the process.

The trays of hose are then carried to the grey goods inspectors As each stocking is removed from an inspection form, it is put into a smooth cotton bag. Each bag contains two dozen hose for preboarding. The preboarders remove the work from the bag and return it to the same container upon completion of the preboarding operation.

The work flows directly to the dyehouse from these same bags. Every precaution is taken to hold picks and pulls to a minimum by supplying hand lotion, fingernail files, and other essential supplies.

Preboarders and final boarders wear gloves while working. The wearing of jewelry is prohibited in every department. Knitters' tables, seamers' and loopers' chairs, and practically all other tables throughout the mill are covered with cloth.

Mill No. 8. This plant has the same system as Mill No. 7, except that the knitters use gloves to remove hosiery from the dyeing machines. The inspectors put five dozen in each wrap, and these are shipped to the finishing plant in another city.

Mill No. 9. The tray system is used from knitting to inspection. After inspection, the stockings are removed from the form and are placed in a blanket for passage to preboarding. After preboarding, the hose are put in mesh bags for dyeing and finishing. The hose are carried to the boarders in this same bag, but the bags are discarded after boarding because the stockings are placed on rolling tables or trucks and carried to the pairing-packaging tables, where the hose are matched and placed into cellophane packages.

Mill No. 10. Knitters place one dozen hose in a white sheeting bag. The hose are tied in three places prior to insertion in the bag, and the latter has three permanent tie strips attached. There is one strip at each end and one in the middle.

This sheeting bag is passed on to the looper. The looper does not remove hose from the bag but she pulls the feet slightly out. A girl who waits on the loopers then takes the sheeting bags, removes the hose, and puts five dozen hose together; she then inserts them into another bag and passes this to the seamers.

The seamers operate on the hose and place five dozen of them in a mesh bag, in which the hose are dyed later in the sequence of processes. From seamers, the hose pass to the clipping process where the hose are turned inside out, and all long yarn is clipped with scissors.

After clipping, the hose are passed through the turning process, in which the inside is turned from outside to inside again. As each hose is turned by the special process, it is dropped into a cloth bag.

This bag is carried to the inspector. This operative does not allow the hose to rub against each other. The hose are put in the same mesh bag and then they are carried to the preboarder. This operative removes the hose from the bag and places them in a trough covered with cloth. The trough is located in front of the boards. The hose are placed on the boards and after setting is completed, again the stockings are placed in the same type bag. The preboarders wear white cotton gloves.

The same bag is used in the dyeing operation, followed by boarding. The boarders do not use white cotton gloves, but they do apply lotion to the hands.

After boarding, the hose are folded half way in lots of 15 dozen each. They are then carried to the pairers. After pairing is completed, the hose are fed to a conveyor belt where operatives stamp the hose, place them in individual cellophane packages, and then into boxes.

This plant has an excellent record of firsts in relation to the number of dozens processed. Taking 15-denier hosiery as an example, the following percentages resulted from the dozen lots indicated:

15	dozen	93.01% firsts
401	dozen	**90.07% firsts**
1007	dozen	91.22% firsts
140	dozen	90.24% firsts

Out of 133 dozen inspected for one style, the following results were recorded: "Class A" mends. 181 dozen; "Class B" mends, 15 dozen; waste—18 stockings; long pulls—6 dozen. The average finish for all styles is 87%.

Mill No. 11. Knitters place five dozen stockings into a cotton bag which extends the length of the stocking. These bags are carried

directly to the looper who removes the foot and a portion of the leg from one end of the bag, leaving most of the stocking untouched. After completion of looping, the seamer takes these bags, removes the hose, seams them, places the stockings into a mesh bag, and passes them to the inspector.

The inspector looks over the stockings on the form and places them in a similar mesh bag, and they are passed to the preboarder. This operative removes the stockings from the bag and lays them in a long cloth-covered trough. After this they are placed on the boards. When the setting is complete, the stockings are placed in a similar mesh bag.

After the bags are removed from the dye machines and extracted, operatives wearing white cotton gloves remove the stockings from these damp bags and place them in larger bags for the boarders.

The boarders complete their work, and the hose are stacked in piles by the dozens to be carried to the inspecting-pairing tables.

Upon completion of inspection-pairing, the stockings are placed in 100 dozen lots and are carried on a truck to the head or feed end of a conveyor belt, where stamping, folding, placing in individual cellophane packages, and boxing completes the handling in this plant.

Mill No. 12. The knitting machines and all other equipment used in the manufacturing process, including trucks, tables, etc., are constantly checked by inspectors for rough spots that may cause pull-threads.

Employees that handle nylon stockings are not permitted to wear jewelry on their hands or arms. By request of employees, exceptions are made to permit the wearing of wedding rings, in which case an elastic guard is furnished.

Specially trained inspectors constantly check the operators' hands and fingernails for roughness. Gloves are provided for the various operators according to their jobs. It is also necessary to check the gloves because they become rough through wear or sizing accumulation.

Above, cloth-covered trough as used by preboarders at Mill No. 11 for protecting hose from picks.

At right, knitter places nylon stockings into a cloth bag for protection from snags and pulls.

The knitters are instructed to be careful when taking the set off and handling the stockings. Each dozen is wrapped separately in a cloth cover, and a specified number of dozen are tied together as a unit. This unit is placed together in a soft cloth bag for transportation between the grey departments. The covers are constructed so that the looper can loop them by only taking the feet from the cover. The seamer removes the stockings, and after seaming places them in soft bags, each containing the specified unit. The stockings are handled in these bags through seaming, examining, preboarding, and to the grey stock room where they are packed for dyeing.

In the dyeing process the stockings are protected in the customary manner by using special dye nets. The stockings are removed from these nets for boarding, after which they are placed on smooth cardboard or fiber trays. The stockings remain on these trays in the succeeding operations, such as pairing, stamping, and folding. Even greater care in handling must be exercised because a finished stocking is more susceptible to pull-threads.

Knitwear Imports May Become Serious

One of the commitments entered into by our government during the war period and since, has been to reduce our import tariffs progressively for certain classes of commodities and raw materials. And this policy has been carried out, so far, whenever permitted or encouraged by our State Department. The object is to promote world trade by leveling tariff and other barriers, but recently the shortage of dollar-exchange abroad has led some countries to devalue their currencies.

In the legislation that empowered Washington authorities to agree to minimizing the amount of tariff protection for our domestic industries, it is conceded, a number of safeguards were proposed, but observers say it now seems doubtful that these safeguards will be availed as soon as the need for them arises. If so, it is added, there may be periods during which foreign knitwear and other merchandise will be able to establish a foothold in this country.

BLUE RIBBON MODERNIZATION AT DREXEL KNITTING MILLS

By MILTON C. MAY

EXTENSIVE modernization at Drexel Knitting Mills Company includes new building, renovation, air conditioning, lighting, new machinery, landscaping, and fire protection. Employees benefit from new arrangement and facilities. Increased production expected to double as modernization continues.

ABOUT seven miles south of Morganton, N. C., in a quiet little village, modern means and methods are being employed in the knitting industry that has taken root and grown. The Drexel Knitting Mills Company has been modernized in every respect to produce men's half-hose of superior quality in keeping with the tradition that prevails there. Every detail has been carefully scrutinized and evaluated to assure efficient operation with adequate comfort, convenience, and safety for the employees.

The plant is now producing 3000 dozen pairs of finished men's fancy half-hose per day, and production is expected to double when new facilities are utilized to full capacity. This modern mill produces approximately 50 different patterns and styles of circular knit hose, and pattern changes are made twice or three times each year. Each month Drexel uses approximately 60,000 pounds of yarn, including wool, cotton, rayon, and nylon.

From observation, it is apparent that nothing was overlooked in planning and modernizing this productive knitting enterprise. The plant was designed to manufacture a finished product—ready to wear—from knitting yarns procured from the commercial market. The goods produced are marketed under the customer's brand name.

Samuel Huffman started Drexel in 1910. His son, R. O. Huffman, became manager in 1913, and is now president and general manager of Drexel Knitting Mills Company. Mr. Huffman is past president of the Southern Hosiery Manufacturer's Association, past director of the National Association of Hosiery Manufacturers, and is now on the advisory board of the Women's Full Fashioned Division of the National Hosiery Manufacturer's Association.

F. L. Bowers is vice-president and treasurer of the company. He is a member of the advisory board of the Men's Hosiery Division of the National Hosiery Manufacturer's Association. Robert Walker is superintendent of the mill.

The management of this modern knitting mill has demonstrated able leadership by taking a prom-

inent part in regional and national affairs in the knitting industry.

The New Drexel

There were only 20 machines, making socks in one size and two colors, when the mill first started. Not many years ago, Drexel had 33,000 sq. ft. of floor space for all operations and equipment. Their program of modernization and expansion has included a new addition of 65,490 sq. ft. of floor space, and the flow of goods through the mill has been completely reversed. The present boxing and shipping department was formerly the knitting department. Approximately 37,740 sq. ft. of floor space is used for the knitting and looping departments. The remainder is utilized for dyeing, grey goods storage, shipping, etc., and some reserve space is maintained for future expansion.

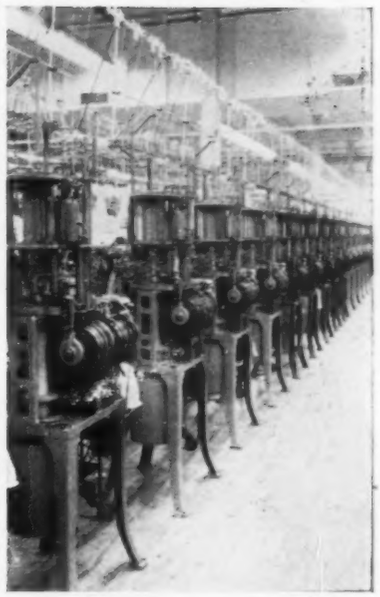
New Knitting Machines and Loopers

The company has installed twenty new 132-needle Links & Links circular knitting machines, twenty 168-needle Links & Links machines, fifty HH-PW machines, twenty 240-needle Links & Links machines, and twenty new Wright dial loopers.

New Dyehouse Equipment

The dyehouse has been modernized and expanded with the addition of one 200-pound capacity Smith, Drum dyer, one 100-pound Smith, Drum dyer, one 50-pound Smith, Drum dyer, and one Tolhurst Whirlwind extractor. A new dye laboratory has been added to facilitate further progress, efficiency, and modernization in that department.

A battery of S & W Model HH-PW (220-needle) knitting machines



A section of 132-needle Links & Links machines for the manufacture of coarse goods.

The Knitting Department

There are approximately 460 circular knitting machines in operation in the knitting room at the present time, and the company is contemplating the addition of more new type machinery in the near future. The plant is designed for future expansion, and it appears evident that Drexel has no intention of halting its efforts toward continued modernization.

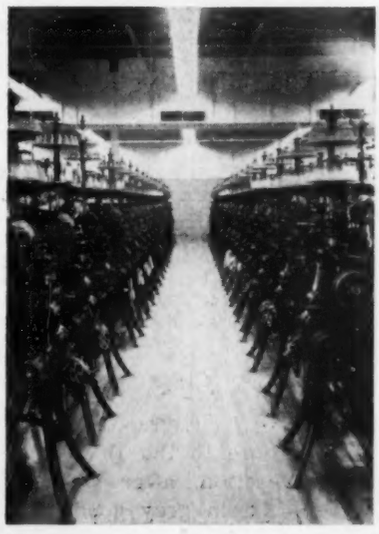
The knitting equipment now in use includes 132, 168, 176, 200, and 240-needle Links & Links machines. The wrap stripe machines include Scott & Williams 80W, HH-PW, and model ES machines (both automatic and transfer type); Banner wrap, and 120-needle Banner wrap reverse plate machines.

Several Swiss clocking machines are used to give the plain hosiery machines a wider pattern range. There are very few of these machines in this country.

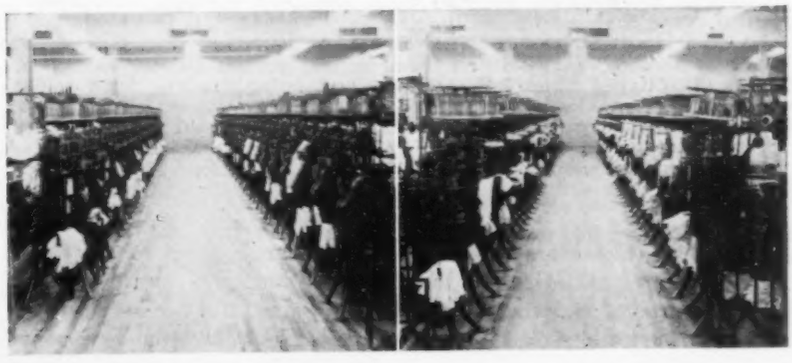
Flow of Goods Through the Plant

The sequence of operations in effect at Drexel starts when the yarn is received by motor transport. It is first placed in storage for con-

A group of Banner 120 and 220-needle reverse plate and wrap machines in operation.



At left is shown two neat rows of S&W Model ES 220-needle machines. Right, a battery of S&W Model 80W wrap stripe machines.



Pictorial presentation showing flow of goods through plant. Yarn is stored in conditioning room (1) before it is issued to knitters, and it is moved to knitting room (2) as it is needed. From knitting room, hosiery goes to clippers (3). Clipped hosiery is then sent to looping department (4). Note non-glare lighting. After the looping operation, hosiery is dropped through chute (5) to grey goods storage on floor below (6). Note chute at left. Hosiery is then sent to grey goods inspection department (7). After inspection, grey goods are batched and sent to dyehouse (8). When dyeing has been completed, hosiery is transferred to boarding department (9). From boarding, hosiery is sent to finisher clippers (10), then to pairing and folding department (11), and finally to packaging department (12). Here a conveyor belt transports hosiery while stamping and labeling are accomplished. When hosiery comes off the end of the belt, it is placed in boxes and packed for shipment.

ditioning. The storage space for conditioning is adjacent to the knitting room, and the yarn is issued to the knitters as it is needed. The grey goods from the knitting machines are sent to the vacuum clippers for removal of loose threads before they are sent to the loopers. A chute delivers the looped hose to the floor beneath for inspection, after which they are, placed in grey goods storage

He Took One Look at Our 1932 Ambulance

It was an exciting day in our town when Dr. Adams took off his khaki and went back to work at the Hospital.

He took one look at our 1932 ambulance and ordered a new one. It was easy to see that we needed a new ambulance, but where was the money to come from?

At the Hospital Board meeting that night, we asked Dr. Adams for his suggestions.

"A friend of mine," he said, "will give you $5,300 for a new ambulance—on one condition. Starting now you are to set aside each year in a separate fund 20% of the cost of a new ambulance."

That "deal" started a new trend of thinking on our Hospital Board.

That was three years ago . . . and today the cash in our ambulance fund is 60% of the cost of a new ambulance. And no one has ever suggested that we use the ambulance fund for any other purpose.

Take a look at your last Financial Statement: Do you really have the money that you charged off for Depreciation in past years? Is it part of your "current" assets . . . or is it earmarked as a separate fund under "fixed" assets?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

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Sure it steals your heart away . . . For it's the sheer, clear beauty of flawless full-fashioned stockings that keeps the lassies smiling. Full-fashioned stocking manufacturers choose TMW "Fixture Drawn"* Needles to assure these finer qualities in full-fashioned knitting. This special TMW patented process holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

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TEXTILE MACHINE WORKS • READING, PA.

The parts department is near the knitting and looping departments.

The machine shop for maintenance and repair is conveniently located adjacent to the knitting room.

to await further operations.

The grey goods are batched in the storage department and are sent to the dyehouse. After the dyeing operation, the hose are boarded in a room equipped with Paramount steam-heated forms. They receive a final clipping and inspection before being paired, batched, and placed in finished goods storage—ready for packing and shipment. The sequence of operations is essentially the same as it has been for some time, but the new arrangement and layout has resulted in more efficiency.

Maintenance Not Overlooked

A fixers' supply room and a small machine shop were incorporated in the new arrangement to provide adequate facilities for maintenance and repair work. A good maintenance program has always been a part of the efforts at Drexel to keep the plant in good running order.

New Building

The new building is of concrete cinder block construction on the outside and Foamglass blocks on the inside walls and ceiling for efficient insulation. There are no windows in the new building, which is equipped with the latest type fluorescent lighting arranged for effective and more than adequate illumination. The most suitable lighting equipment was especially selected to meet the industrial requirements at Drexel.

The interior of the building was finished with two pastel shades of green. The Du Pont Company selected for the job the most restful, non-tiring, and mildly stimulating colors of paint. The color scheme is attractive in appearance and was made more practical through the use of flat paint which does not reflect light to produce glare. The result is good for best visibility, and the interior of the entire plant is given additional life for the benefit of operatives in their respective departments. All old buildings have been completely reconditioned throughout. The grounds surrounding the plant have been landscaped and graded for better drainage and to enhance the beauty of the premises.

Approximately 3000 sq. ft. of office space have been completely renovated and arranged for efficient operation and comfort. A communication system is installed for quick contact with any and all departments, and office facilities are augmented further by air conditioning and effective lighting.

An automatic sprinkler system provides fire protection throughout the entire plant, and a new 100,000-gallon water tank for fire protection reserve is now in the process of construction.

Complete Air Conditioning System

The modernization program included careful consideration and provisions for control of atmospheric conditions within the mill to further facilitate quality control of the product. The complete air conditioning system maintains

View showing ductwork and grills which are part of Bahnson air conditioning system in the knitting department. Grilles give control of air flow in vertical and horizontal directions.

DOUBLE YOUR PRODUCTION OF VARIABLE STRIPE FABRIC!

Announcing:

. . . Supreme's Revolutionary, New, Model SA, Variable Stripe Knitting Machine with . . .

- ★ *100% more production* than present stripers.
- ★ A minimum of *16 feeds* knitting *four colors.*
- ★ A *revolving* cylinder, take-up, and cloth roll-up with *stationary* yarn rack.
- ★ *Stripes and patterns at the same time.*
- ★ *Individual drum-type striping box* mounted on stationary feed.
- ★ Stripes as *deep* as you want . . . *varied* the way you want.
- ★ *Quiet*, concealed camming.
- ★ *Simple, easy patterning* . . . both for stripes and designs.

An Invitation

THE SUPREME KNITTING MACHINE CO., INC.

cordially invites you to a trade preview of its new

MODEL SA Automatic Variable Striper

To give you the fullest possible attention of our technical staff, visits are being arranged, by appointment only, to see the machine in operation at our plant and to inspect some of the unusual fabrics it produces. You are invited to write or telephone so that a convenient time and date may be arranged for your visit.

SK-109

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KNITTING MACHINE CO., INC.
105 Johnson Ave., Brooklyn 6, New York, N. Y., U. S. A.
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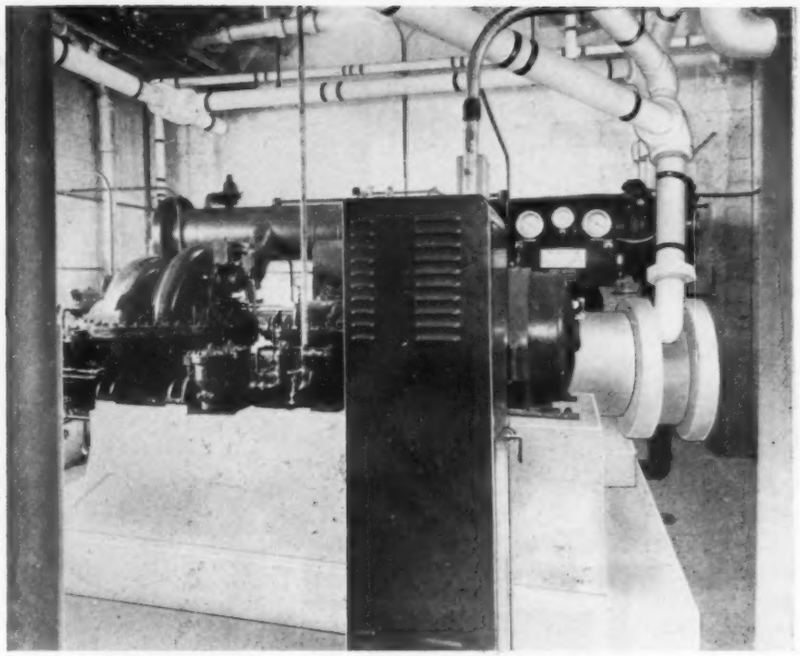


Scene in refrigeration room showing 150-ton centrifugal refrigeration machine installed in conjunction with the air conditioning system.

constant control of temperature and humidity the year around. Constant control of atmospheric conditions minimizes the necessity for adjustments to production machinery, and consistent with the policy of Drexel, the health and comfort of the operatives was a primary consideration.

The conditions chosen to be maintained by the air conditioning system are 50 per cent relative humidity and 78 degrees dry bulb temperature. These conditions are maintained by two refrigerated central station air conditioning systems, one serving the knitting room, and the other serving the looping and seaming department. One refrigeration system consists of a Worthington centrifugal refrigeration machine and accessories. This machine supplies chilled water for the air washers of both systems. The entire air conditioning system was installed by The Bahnson Company, air conditioning engineers, manufacturers, and contractors, Winston-Salem, N. C.

The apparatus room housing the air conditioning system for the knitting department is located on the main floor level of the mill at one end of the knitting room. The system for this department consists of a Bahnson air washer, a centrifugal fan, and a pump for circulating water through the sprays of the air washer.

The knitting room system delivers 62,300 cubic feet per minute of conditioned air which is distributed throughout the knitting room by a duct system. There are two main distribution ducts, each serving half of the room. All outlets are equipped with adjustable grilles which control the deflection of the air delivered to the room in both vertical and horizontal directions.

The air washer and chilled water lines are insulated with cork, and steam lines are covered with magnesia insulation.

The apparatus supplying conditioned air to the looping and seaming room is of essentially the same design as that of the knitting department. The capacity of this system is 23,600 c.f.m., and only one distribution duct is needed due to the shape of the room.

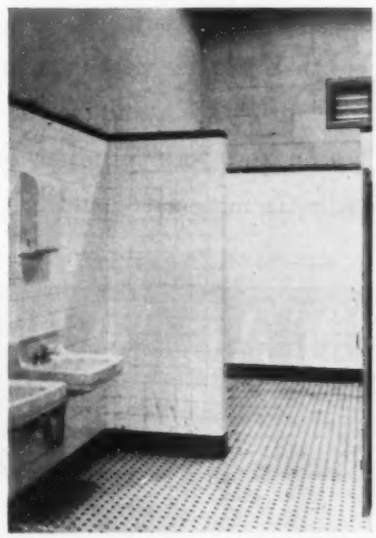
The Drexel Policy

Drexel has a union contract, and employs approximately 460 persons, of whom 70 per cent are women. Each employee has an insurance policy that is paid for by the company. The insurance includes sick benefits, and the company pays two-thirds of the cost of hospitalization, in case of illness. A first aid room is also being installed to take care of minor injuries.

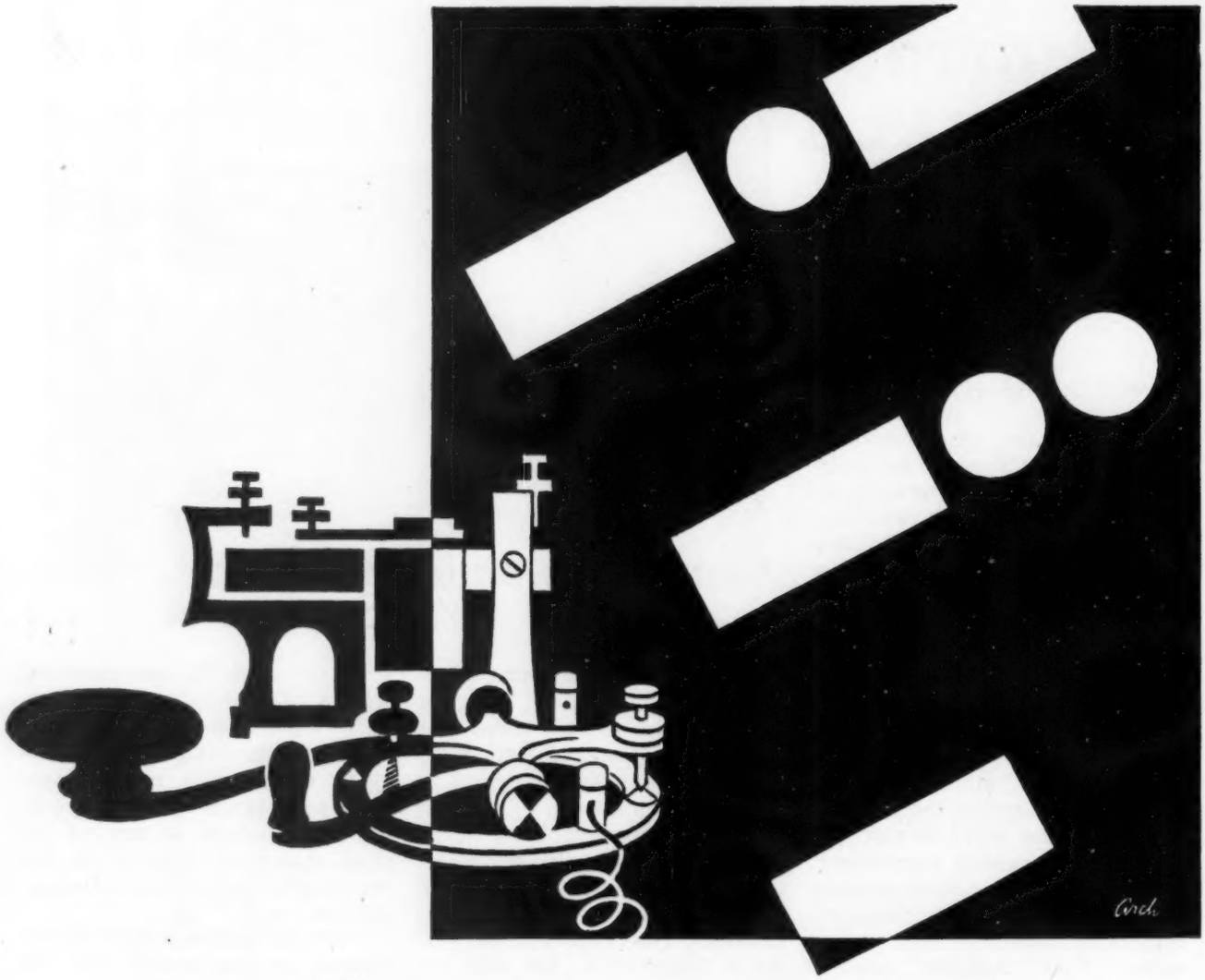
New and modern toilet facilities include smoking rooms, and tile interiors augment their appearance and serviceability.

A cafeteria is being provided. It is being equipped as a convenience to serve all employees of the plant on a non-profit basis. Soft drink and candy vending machines are located at various places in the different departments, and a committee of employees handles the profits as it sees fit.

The policies of management, and the facilities in operation are of sufficient magnitude to show any observer why Drexel is considered a modern and progressive knitting mill.



"New and modern toilet facilities include smoking rooms, and tile interiors augment their appearance and serviceability."



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Special Purpose Tools for Hosiery Machine Fixers

By ERNEST BRIDGES

THE FIRST of a series of articles presenting new tools, gauges, wrenches, and gadgets of various kinds which have been especially designed to fill some particular need for hosiery machine fixers. A special end mill for facing off either end of a Komet lifter hub is described in this instance.

FOR QUITE a number of years the average machine fixer carried the bulk of his tools in his pockets. The whole crop consisted of several screw drivers, two pairs of pliers, and some assorted wrenches. Knitting machines have become more complicated in recent years, which means a much greater variety of tools are needed by the machine fixer.

Fortunately, many tools can be purchased today which were not on the market in days gone by, and many of these are ideally suited for the various types of knitting machines now in use. The Komet fixer of today needs a large variety of open-end wrenches, pin punches, and several different types of pliers. Gauges of various kinds are vitally important. Micrometers and calipers are very useful.

Frequently some ordinary tool can be purchased, and by making some slight additions or changes it can be adapted to some particular use. Various gauges can be purchased from the factory. In many instances tools can be designed by machine fixers and made in the mill's machine shop, or by hand at the fixer's work bench in his spare time.

In future issues of TEXTILE INDUSTRIES we shall present new tools, gauges, wrenches, and gadgets of various kinds which have been especially designed to fill some particular need for machine fixers. All of these devices have been in use and have proved to be of practical value. Perhaps the reader may have something better to offer. If so, write to the Editor of TEXTILE INDUSTRIES. In any event, look these over and then judge for yourself whether they are worthwhile or not.

Shown in the accompanying illustrations is a special end mill which does a nice job when it becomes necessary to face off either end of a Komet lifter hub. In many instances a new lifter will fit perfectly. Simply put it on the stud, adjust it for the correct height to receive the slider butts properly, and adjust the lifter tension spring. Frequently we find that a lifter will not fit properly. The hub may be a bit too long, causing the lifter to bind when the washer screw is tightened securely. This means that the hub must be shortened on either end, depending on how near to the cylinder the inner end or lifting lip of the lifter might be.

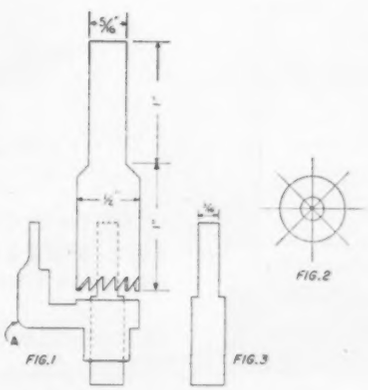

FIG. 1

FIG. 2

FIG. 3

Lifter hubs can be ground down or filed to make them fit properly, but it is rather difficult to do this by hand and keep the ends straight. Lifter hubs can be placed on a small mandrel and turned in a lathe, but trips to the machine shop are time consuming, and production is lost in the meantime.

Figure 1 shows a special end mill made of ½" drill rod stock. It can be put into an ordinary drill press chuck for use. The lifter at "A" is in position ready to be milled. Figure 2 shows how the teeth in the cutting surface can be sawed, making four cuts with a small hack saw. The teeth are filed by hand, or cut on a milling machine.

Figure 3 shows the guide pin, with the lower end turned to fit the hole in the lifter, the upper end 3/16" and a snug fit in the hole drilled into the end mill. The finished end mill has eight cutting edges or teeth. Be sure to face off the teeth when filing by hand so they will be uniform in length and cut smoothly. Temper the cutting edge and guide pin in luke warm water or fish oil to avoid cracking in the hardening process.

This simple tool was an idea which required just two hours to be placed in use. It has made lifter fitting simple, accurate, and fast. We wonder how we did without it for so long.

Let them decide

TO TRAINS

It's not up to us to get into an argument about low or high hems. All we know is — regardless of how much of their curvaceous legs they are inclined to display — women insist on hosiery with all the superior qualities DuraBeau Finishing puts into it.

Lasting beauty • Superb sheerness • Stress resiliency • Snag resistance
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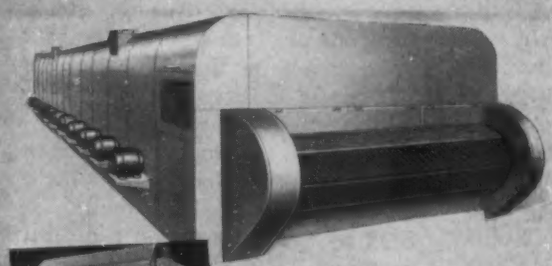
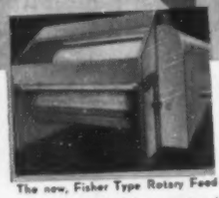
SARGENT'S STOCK DRYER
MODERN—AUTOMATIC





The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

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The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

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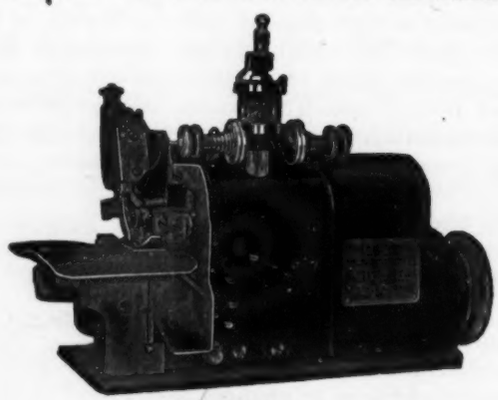

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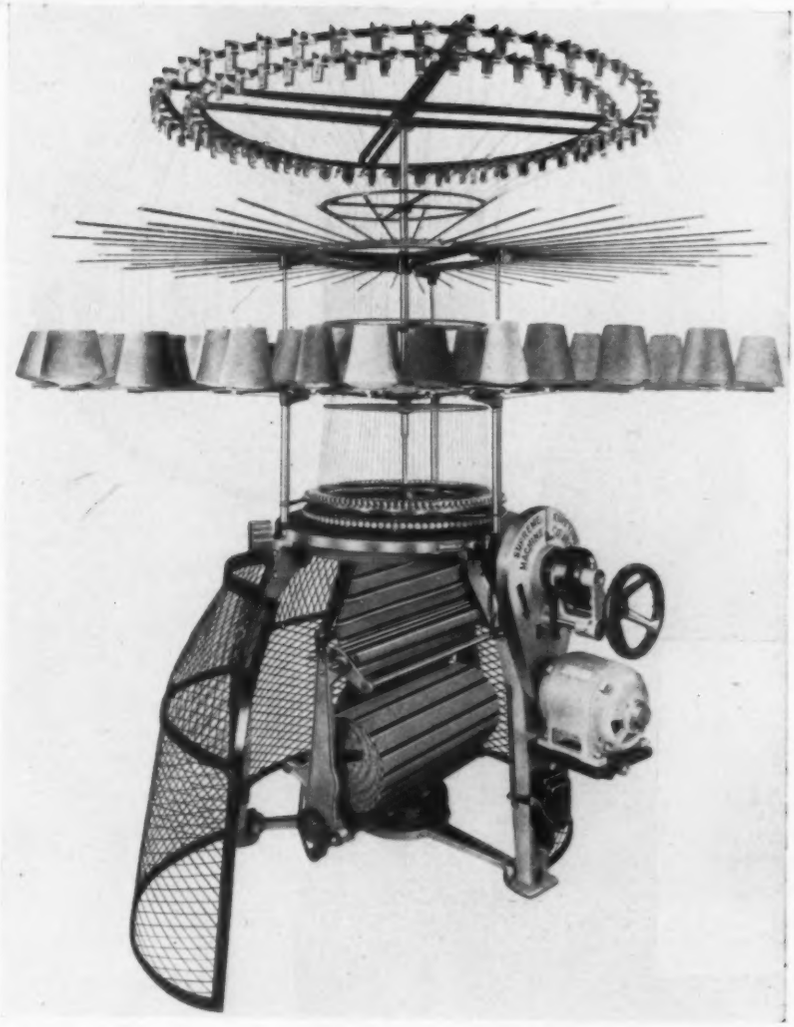
Wide Stripe Circular Knitter

The new Model MJ wide stripe circular knitting machine recently announced by Supreme Knitting Machine Co., Inc., 105 Johnson Ave., Brooklyn 6, N. Y., makes it possible to produce bold, wide striped jersey at a high production rate.

Twenty-six inches in diameter with 96 uniform feed, this machine will knit cotton yarns from 8/1 to 36/1 or their equivalents in wool, rayon and silk. The unit is particularly well adapted to the production of unusual piece goods for the polo shirt and ladies blouse trade, according to the manufacturer.

An important feature claimed for this new machine is the Micromatic stitch control. An individual control for each cam keeps the stitch from each of the 96 feeds uniform. The operator adjusts the stitch by turning the indicator dial on each section by hand. When all dials are set on the same numbers the stitch is uniform.

Some of the other features incorporated in this knitting machine include: Interwinding "Floating Take-up" which keeps uniform tension between take-up and knitting elements at all times; roller bearing supported cloth roll-up which is entirely independent of floating take-up; stationary vibration-free yarn stand—only the cylinder and take-up revolve; interlocking cam raceway of specially hardened steel cams; inserted wall cylinder; patented multi-disc clutch; and automatic idling hand wheels.



Above, the Supreme Model MJ wide stripe circular knitting machine, featuring uniform stitch control. It is 26 inches in diameter, 96 feeds.

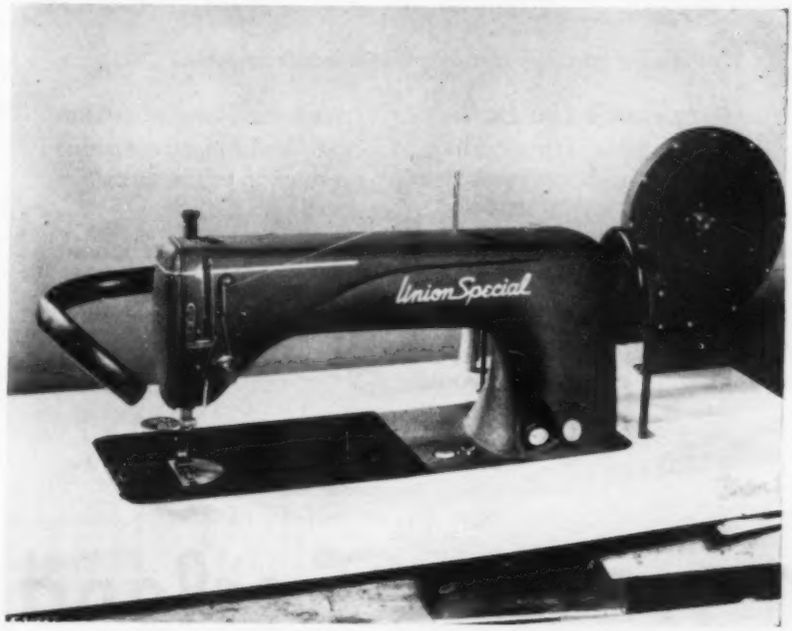
Universal Needle Cooler

Union Special Machine Co., Chicago, Ill., has recently developed a new universal needle cooler which is applicable to many types of industrial sewing machines.

This unit consists of a small specially designed blower equipped with its own built-in motor and a mounting bracket for attaching the assembly to the sewing machine table board. The air delivery tube is detachable and is offered in several different styles to fit various types of machines.

Among the benefits claimed for the needle cooler are thread and needle saving, increased machine speeds, time saving, stronger seams, and elimination of skipped stitches.

Below, sewing machine equipped with a needle cooler which has been developed by Union Special. Blower is shown at right.



54 Gauge Machine By Lieberknecht

A 54 gauge, 32-section full-fashioned hosiery knitting machine has

Back of every great development in Textiles stands the Bobbin.

Fashion applauds the ballet with a cheer for sweeping skirts —luxurious folds of rayon, silk and Nylon. And America's great mills gear their machines for higher production in the throwing of these yarns.

To meet this condition, Cloverleaf- Freeland develops a Bobbin so perfectly balanced that not even super-speeds will affect it; so amazingly strong that not even Nylon will crush it.

This is just one example of the precision at Cloverleaf-Freeland —precision that builds great Bobbins.

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New England Representative:
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CLOVERLEAF-Freeland
BOBBINS

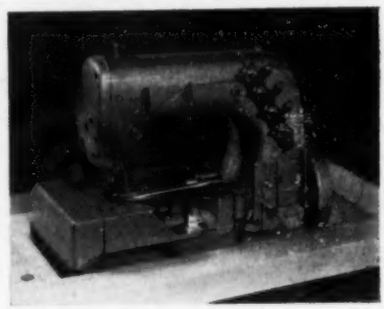
been developed by Karl Lieberknecht, Inc., Reading, Pa.

Experimental machines of this gauge, with automatic welt-turner, etc., were built by the company this year, and are now being offered to the general market of hosiery manufacturers.

Formerly, the finest machine produced by Lieberknecht was for the manufacture of 51 gauge hosiery.

Union Special Announces New Line of Machines

Streamline styling, improved lubrication, and light running, high speed performance are important features claimed for the new Class 52800



machines now in production by Union Special Machine Co., Chicago, Illinois. These machines are specially designed for performing such operations as attaching split tube borders, lace, collarettes, and cuffs.

In this new machine there is one reservoir that provides oil for the entire lower portion of the machine. The upper lubricating system is automatic, being fed from a reserve supply in the head.

Unique Attachment for Cloth Spreader

A new unit that enables the cutting-up industries to lay out piece goods face one way, is now being produced by the Cutting Room Appliances Corp., 45 West 25th St., New York 10, N. Y.

It is a trailer attachment which is designed for use in conjunction with the motor-driven CRA Electromatic cloth spreader, and which lays material face one way, in both directions on the table, from two pieces of goods.

Rethreading of the machine after each ply is cut is not required as the goods are spread from two separate carriages.

The trailer attachment is for flat-folded materials.

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ARE ESSENTIAL TO
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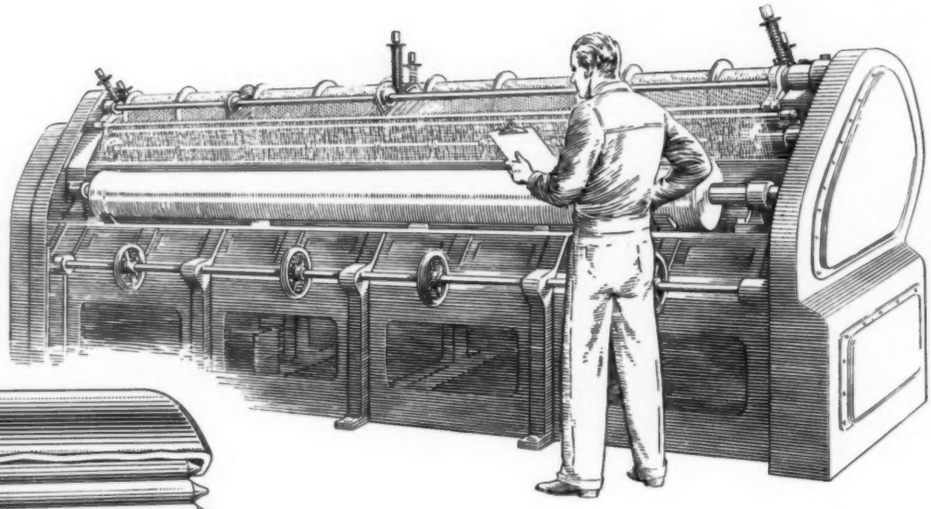
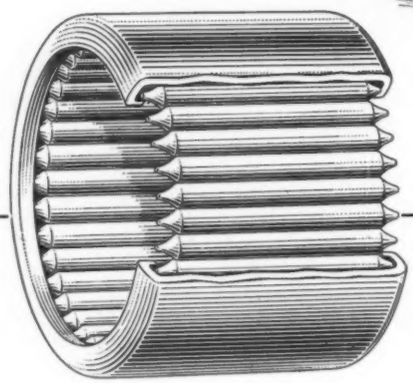
More Uniform Knitting at Higher Speeds

Aided by Torrington Needle Bearings

Torrington Needle Bearings contribute to improved operation of all types of Knitting Machines, Warp (illustrated) and Circular, as well as others common to the Knitting Field.





...efficient lubrication is another advantage of these compact, high-capacity anti-friction units

The smooth, precision action of all sorts of knitting machines equipped with Torrington Needle Bearings produces exceptional stitch accuracy at high speeds.

Typical Applications of Needle Bearings in Various Forms of Knitting Machinery

Pattern wheel drive
Pattern cam and rollers
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Cam followers
Take-up reels
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Needle bar links
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Idler gears
Guide bar pusher rod
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Cloth roller support
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Reduced wear of vital moving parts means less need for adjustments and cam redressing. Greater lubricating efficiency allows longer continuous operating periods before relubrication is required.

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AN EYE ON THE KNITTING MILLS

Gardiner-Warring Co., Inc., Florence, Ala., knit underwear and outerwear, has arranged for a change of company name to J. T. Flagg Knitting Co. J. T. Flagg has been president and treasurer of the company for approximately 20 years.

Huffman Full Fashioned Mills, Inc., Morganton, N. C., has let general contract for a one-story addition to the mill. Work on the structure will begin soon.

Keininger Knitting Mills, Orwigsburg, Pa., women's and children's ribbed underwear, athletic shirts, etc., has plans maturing for a one-story addition, reported to cost approximately $80,000, with equipment.

Spruce Pine Hosiery Co., recently organized and now operating temporarily at Granite Falls, N. C., has work in progress on a one-story mill at Spartanburg, S. C., and will remove to that location as soon as the structure is available. Elmer Cline, among others, will head the company.

Morristown (Tenn.) Knitting Mills, Inc., has plans to make extensions in the branch mill at Rogersville, Tenn. The installation of about 75 new machines is proposed, and new equipment will be used for the manufacture of boys' crew socks.

Clarke Mills, Jackson, Ala., knit goods, have plans maturing for a one-story addition, reported to cost about $220,000, of which approximately $150,000 will be expended for equipment. This company is a subsidiary of Vanity Fair Mills, Inc., Reading, Pa.

Didee Knit Corp., New York, N. Y., has been organized with a capital of 100 shares of stock, no par value, to manufacture outerwear.

Rik Knit Mfg. Co., Inc., New York, N. Y., has been chartered with a capital of 200 shares of stock, no par value, to manufacture outerwear.

Burcon Hosiery Mills, Asheboro, N. C., women's rayon and nylon full-fashioned hosiery, has plans for the early removal of the mill to Burlington, N. C., where the executive offices are located. Expansion in capacity will be carried out at the new location, with the installation of additional machinery.

Heist-McCain Hosiery Corp., recently organized, has leased space in the Holshouser Building in Rockwell, N. C., and will establish a dye works at an early date. They will handle anklets produced by Surratt Hosiery Mills, Newsome, N. C. Equipment and facilities will be provided for an initial output of about 8000 dozen weekly.

William R. Friedman Co., New York, hosiery, underwear, etc., has approved plans for a one-story mill located at Saluda, N. C., and equipped for the manufacture of women's full-fashioned hosiery.

May Hosiery Mills, men's and children's seamless hosiery, has plans for a one-story addition to the mill in Nashville, Tenn. The cost is reported to be about $150,000.

Fiscal Shifts Abroad Dim Export Outlook

According to some observers in the knitwear field, it has become plain that most of the foreign currencies will have to be devalued, and this has already begun in France and Italy, so that 1948 may witness a postwar turning-point in international monetary relations, but without immediately ushering in a definite period of stabilization. That is, according to this view, recent and present attempts by a few European governments to get back to something near prewar currency values, are believed likely to yield only transitory results, so that devaluation can be expected to proceed step by step, each country choosing its own time and methods.

It is pointed out that deflationary measures always are unpopular in the countries whose governments are forced to adopt them, and this has tended to make it doubtful if a gradual adjustment can be had, or whether patch-work reforms finally will produce a violent international monetary crisis. Collapse of the existing regime in any one country might be enough to set off a chain reaction elsewhere, it is stated. Nevertheless, observers contend, attempts to create stability can no longer be deferred, because this is one of the essential conditions for aid from the United States.

In the countries that already have made a beginning, it has been shown that it will take a considerable time to determine what is a really workable compromise between prewar values of currencies, in exchange for goods, and the postwar inflated currency valuations that have upset international trade, say those who are directly interested in maintaining business contacts with various countries abroad. They assert that production costs in individual countries have changed enormously since prewar, and in the future will be influenced not only by cost of raw materials and labor, but in some cases by the amount of new machinery obtained through United States aid.

Some of those in the textile apparel markets, who are regarded as experts when it comes to transactions in foreign trade, explain that early last year it was foreseen that some countries in Europe probably would have to cut back their imports of our goods, and this process commenced shortly after mid-year. In recent months, according to Department of Commerce reports, the outflow of American yarn, fabrics and finished textile products was reduced, but the inflow of foreign items has been slowly increasing.

In view of this trend, spokesmen for the National Retail Dry Goods Association advised the larger re-

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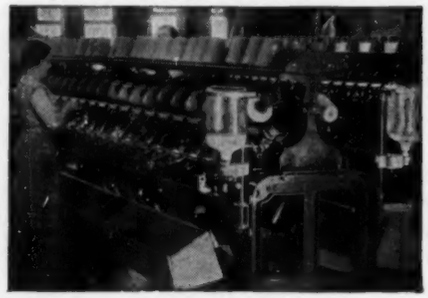

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tailers in January to make a regular practice of buying as much foreign merchandise as possible. This would help to check the upturn of retail costs in America and incidently would be expected to give the big stores some profitable opportunities for promoting certain types of foreign goods.

During the latter part of 1947, business leaders in the top brackets counted on the Marshall Plan underwriting a further period of deficit-spending abroad, which would sustain large exports from the United States, it is explained. Although it was admitted this new outlay of billions for relief would come out of the taxpayers' pockets in this country, the business tycoons seemed to have decided this was preferable to having a shake-out of the inflationary structure of prices and profits in America.

Delay by Congress in accepting the Marshall Plan in its entirety, it is added, and the very critical attitude taken by political leaders in some sections of the country, have lately combined to make it appear to foreign governments that further financial help from the United States will probably be much less than was promised by our State Department. On this basis there is little can be done abroad but take the hard and perilous road of reconstruction, starting with a tentative marking-down of the presently fantastic "official" currency valuations.

Anklet Allotments Are Taken Up

Branded goods in current allotments of anklets for women and children have been readily taken up by customers, at moderately higher prices, for deliveries during second quarter, it is reported by manufacturers' spokesmen. The sharp rise in cost of combed and mercerized yarns is said to have occasioned higher prices for mercerized anklets. This represents a change of policy by many producers in this field who priced first quarter deliveries of branded anklets unchanged. Since then, it is stated, in some cases they have been forced to make changes in certain items, and their standard constructions often have had to be marked up.

In addition, where nylon yarns are concerned, demand has held up fairly well, but supply of suitable yarn has lagged in some quarters, partly because deliveries were delayed on account of winter storms that hindered transportation. It is indicated there is presently no oversupply of finished merchandise in this category, either among retail or wholesale outlets. However, among retailers there has been over the past few weeks a disparity in unit volume of sales, and if this condition is prolonged, some observers state, it may result in some stores accumulating moderate over-stocks of some types of goods.

Tricot-Knits Feature Underwear Markets

Trade observers report definite expansion in consumption of tricot-knits. This is explained as being due to market conditions prevailing in reciprocal types of goods, together with wider acceptance by consumers of tricot merchandise. As previously reported, standard sorts of woven underwear have been made more costly because of advancing prices in the fabrics. This has induced more and more cutters to turn to warp-knitted materials. Acetates dominate so far, it is claimed, but there has been an increasing adoption of nylon types.

Accordingly, production of acetate yarn is seen to have expanded, and this has been paralleled by introduction of more warp knitting facilities. With twisting and coning eliminated in this process, producers of acetate filament have responded to profit advantages in selling to the tricot manufacturers, it is said. In part, some observers comment, this reflects the general inflationary trend. The outcome of this movement has been, thus far, that this type of goods has recovered the ground lost last season when prices were more depressed than in any other kind of rayon textiles.

The dress trade still remains a light user, but the underwear manufacturers now appear to have taken up most of the "slack."

Yarns for Knitwear to Remain Costly

Underwear and hosiery manufacturers, having mostly covered their yarn requirements ahead for varying periods, recently became increasingly hostile to further marking-up of yarn quotations. This applies to cotton underwear yarn especially, market interests report, but the hosiery mills also have been critical of the late advance in mercerized yarn rates. Yet yarn sources point out that natural combed yarns are higher-priced since January 1 and to this has been added a new round of cost increases in the further steps of processing.

Supplies of coarse and medium-count carded yarns are expected to overtake the demand later this year, but combed yarns probably will remain tight through the balance of 1948. Fine yarn supply will continue to reflect the shortage of staple cotton, of which the domestic production from the last crop was less than 300,000 bales. The import quota on Egyptian cotton was absorbed last fall almost as soon as it was announced. Late in 1947, the cotton manufacturers pressed the Department of Agriculture for a supplemental quota, but this was opposed by the spokesmen for the cotton growers. Meanwhile, the Egyptian price has advanced again, as compared with last year.

Domestic demand for combed goods, both woven and knitted, may decline moderately after the Easter season, it is admitted, but market authorities still believe that all of the combed descriptions of sale yarn—and probably the fine and medium counts of standard-grade carded yarn—will remain relatively costly, at least until mid-year. Over the past several months, spinners have been concentrating on the needs of their domestic customers, it is said, but when and if the domestic demand eases off, it is expected the slack can be taken up by export sales.

The new purchasing program of the armed forces, it is contended, has already helped to tighten the market for some kinds of yarn, at least temporarily. Substantial weights of combed yarns have already been ordered.

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This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Textile Industries," containing valuable information, illustrations, tables, charts and diagrams.

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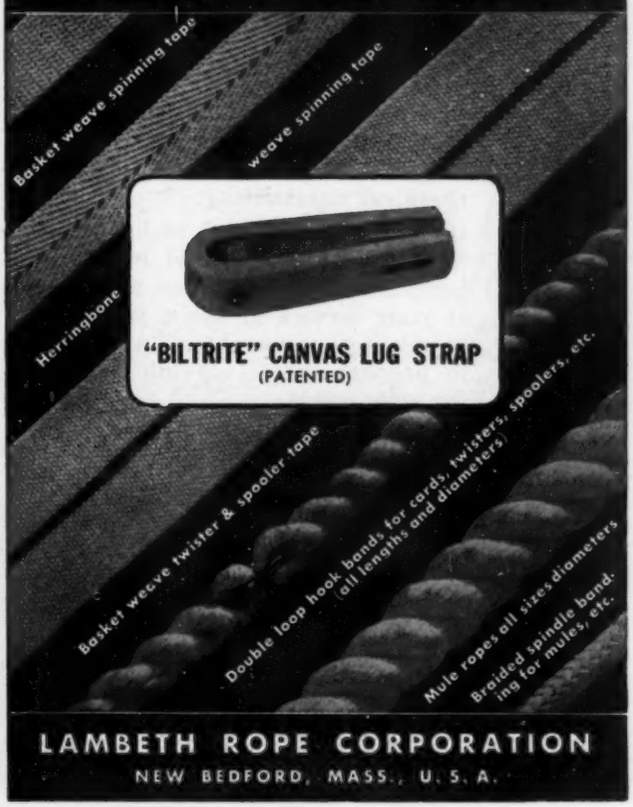
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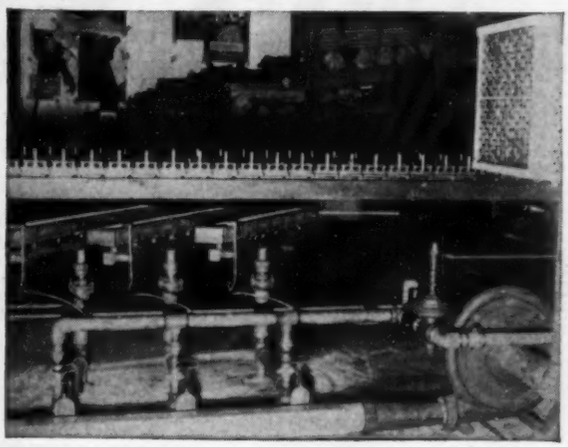

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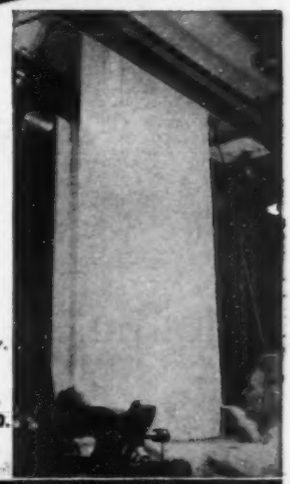

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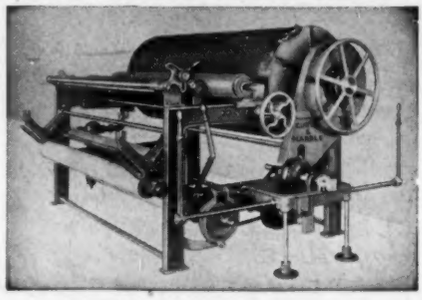

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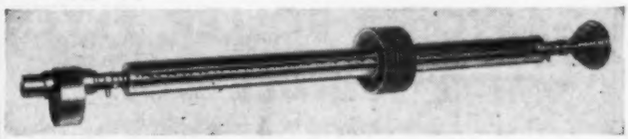

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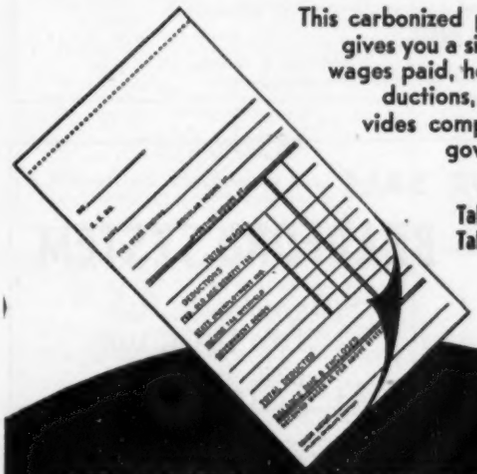

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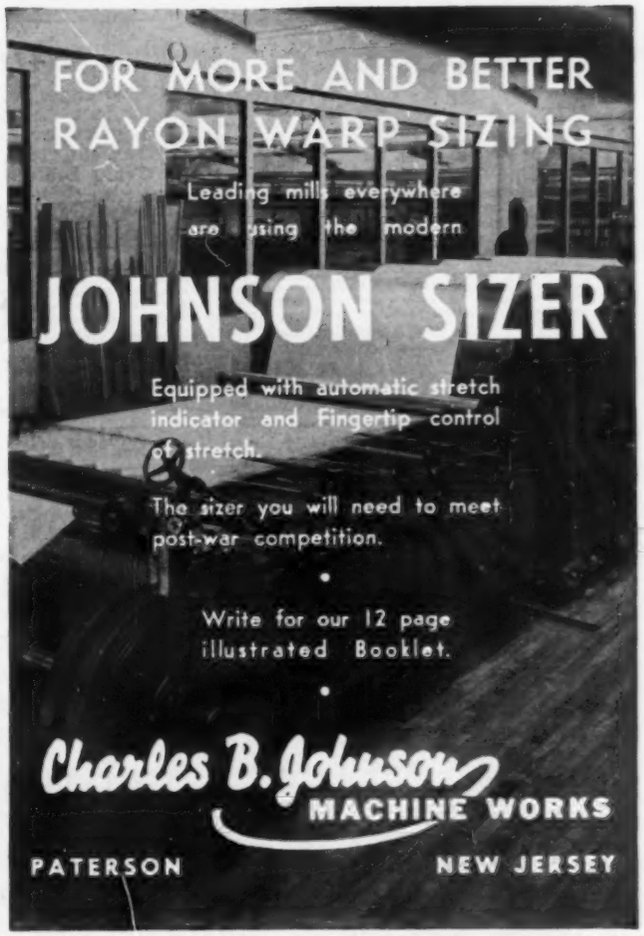
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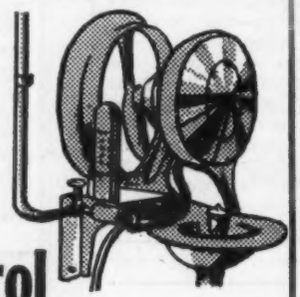

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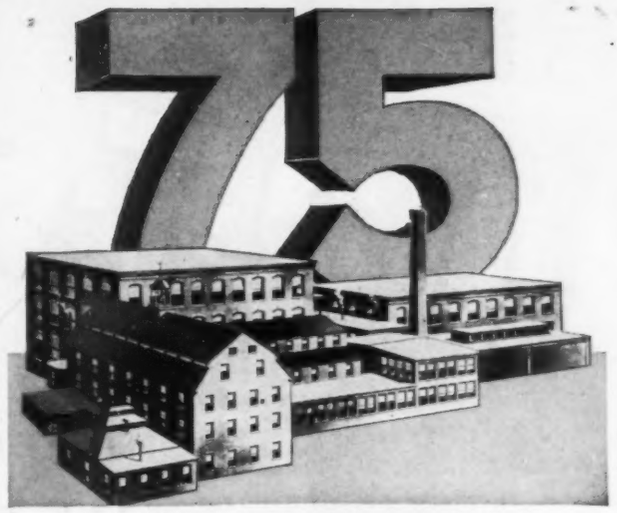

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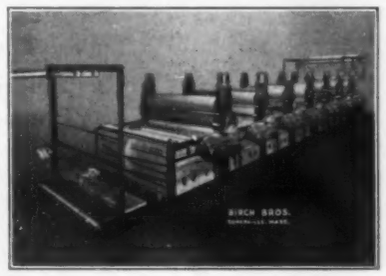

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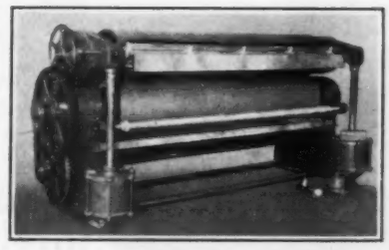

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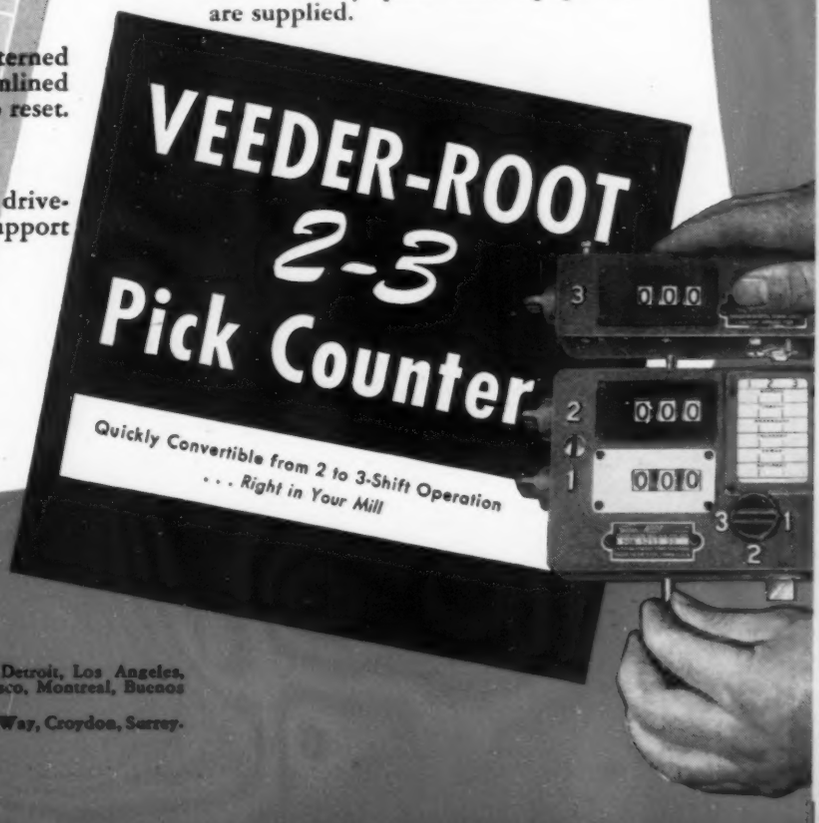

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